

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|              |   |                      |                       |
|--------------|---|----------------------|-----------------------|
| Appl. No.    | : | 09/748,716           | Confirmation No. 5358 |
| Applicant    | : | Sara Elo DEAN et al. |                       |
| Filed        | : | December 22, 2000    |                       |
| TC/A.U.      | : | 2173                 |                       |
| Examiner     | : | Brian J. DETWILER    |                       |
| Docket No.   | : | POUG920000205US1     |                       |
| Customer No. | : | 23334                |                       |

REDLINE37 C.F.R. 1.131 DECLARATION

I, each and every one of the undersigned inventors of the above-referenced patent application, hereby declare the following:

- 1) Claims 1-9, 11-31, and 33-39 in our above-identified patent application were rejected under 35 U.S.C. §102(e) and claims 10 and 32 were rejected under 35 U.S.C. § 103(a) based on U.S. Patent Publication No. 2002/0085020 A1 to Carroll, Jr., entitled "XML-Based Graphical User Interface Application Development Toolkit" filed on September 14, 2001, with a priority date of September 14, 2000 ("Carroll").
- 2) The invention described in the above-referenced patent application was reduced to a writing prior to the September 14, 2000 priority date of Carroll. In particular, *Franklin Content Management Prototype* documentation (exhibit A), upon which the above referenced patent application was based, is attached herewith. The documentation is a comprehensive specification and installation of the inventive system (see the table of contents of this document for the full detail) created and used by the inventors prior to the September 14, 2000 priority date of Carroll and demonstrating features of the presently claimed invention. It includes everything from an Installation guide, configuration, setup of the DB and a Franklin workspace for content management, setting up of users, roles, and includes code snippets of communication between components and error codes.
- 3) Additionally, the invention described in the above-referenced patent application was reduced to actual practice prior to the September 14, 2000 priority date of Carroll. Proof of actual reduction to practice upon which the presently claimed invention was based is attached herewith and will be described in detail below.
- 4) Submitted herewith as evidence of actual reduction to practice prior to the September 14, 2000 priority date of Carroll are the following exhibits:  
Exhibit A) In particular, *Franklin Content Management Prototype* documentation (exhibit A), upon which the above referenced patent application was based, is attached herewith. (PDF File Pages 1-50)  
 Exhibit B) Assignments passed out to users prior to the September 14, 2000 priority date of Carroll to test users who were evaluating the

integration between two systems: the present invention and "Kittyhawk" prior to the September 14, 2000 priority date of Carroll. The scenarios ask users to do different actions in the present invention's UI, which would show that there was a running system that could support users prior to the September 14, 2000 priority date of Carroll. The document describes the integration of the two systems, and shows the request/responses part of the communication between the two systems. (PDF File Pages 51-70)

Exhibit C) A copy of a State chart of the invention's DB with each possible state of a fragment when stored in the invention's DB. The State chart was created and used by the inventors prior to the September 14, 2000 priority date of Carroll and demonstrates features of the presently claimed invention. (PDF File Pages 70-71)

Exhibit D) Copies of HTML pages created by the inventors prior to the September 14, 2000 priority date of Carroll and demonstrating features of the presently claimed invention. The HTML pages describe to users how to install the inventive client and issue commands to manage documents, such as Check in, Check out, review, publish and describes the fragment/servable relationship to users. (PDF File Pages 72-75)

Exhibit E) A synthesis of all feedback from a user acceptance testing of the Invention, run prior to the September 14, 2000 priority date of Carroll. It includes a list of things users liked and did not like, which evidences that users were using the running end-to-end inventive system with features of the presently claimed invention prior to the September 14, 2000 priority date of Carroll. (PDF File Pages 76-90)

Exhibit F) A copy of brief notes identified during a code review of the invention's server code made prior to the September 14, 2000 priority date of Carroll. (PDF File Page 91)

Exhibit G) An email correspondence to persons other than the inventors of the present invention, listing the internet address for accessing, and instructions on how to use, the working prototype system created and used by the inventors prior to September 14, 2000 priority date of Carroll and demonstrating features of the presently claimed invention. (PDF File Pages 92-94)

Exhibit H) An email correspondence with reviewer feedback on the working prototype system created and used by the inventors prior to the September 14, 2000 priority date of Carroll and demonstrating features of the presently claimed invention. (PDF File Pages 95-98)

Exhibit I) Copies of several screenshots of the working prototype system created and used by the inventors prior to September 14, 2000 priority date of Carroll and demonstrating features of the presently claimed invention. These screenshots show lists of XML documents having content objects and content fragments which are named and linked through the entry fields. (PDF File Pages 99-101)

Exhibit J) A copy of a section of the source code file that was created and used by the inventors prior to September 14, 2000 priority date of Carroll and that implemented part of a working prototype system that performed features of the presently claimed invention. (PDF File Pages 102-103)

Exhibit K) A copy of the source code FranklinEditor.java that was created and used by the inventors prior to September 14, 2000 priority date of Carroll and that implemented part of a working prototype system that performed features of the presently claimed invention. (PDF File Pages 1-31)

Exhibit L) A copy of the source code InterfaceMaker.java that was created and used by the inventors prior to September 14, 2000 priority date of Carroll and that implemented part of a working prototype system that performed features of the presently claimed invention. (PDF File Pages 1-16)

- 5) The evidence submitted herewith supports the reduction to practice. The following table is submitted to show how each claim element is supported and that the test results unequivocally establish this software existed and worked for its intended purpose.

Claim1 is an example. The other independent claims (18, 23, & 39) recite identical limitations.

Claim 1: A method on an information processing unit for performing steps for assembling, with a user interface (UI), a document that conforms to a particular document type definition, the method comprising:

receiving a user selection for a document type

Exhibit B, page 3 under Scenario I, step 2.3, describes the step of creating the appropriate fragment: "Start the task to create the appropriate fragment, fill it in, and check it in."

Exhibit A, page 25 "Create new content" paragraph shows the process of creating new content. Here the user must select a document type from the **File > New Fragment** menu or the **File > New Page** menu. These menus list all the available DTD types and it generates a template, for display in the UI, from the DTD selected.

Exhibit A, page 25 "Create new content" and Exhibit D, page 2 "Create New Fragment" and

|   |  |
|---|--|
|   | <p><u>"Create New Page" sections describe the procedure that a user has to perform to select and create a new document abiding to a document type. The system point of view of this process is the "reception of a user selection for a document type".</u></p> <p><u>Exhibit K, line 1095 Function</u><br/> <u>getToolBarPane shows creation of UI to allow user to select a "new fragment or page"</u><br/> <u>Lines 1099-1105 creates the button to do the action. e.g., iv newButton.setToolTipText ("Create new fragment or page");</u></p> <p><u>Exhibit K at line 760 Function</u><br/> <u>getFragmentTypeMenu produces the menu for the user to select the type of DTD.</u><br/> <u>Comment at 752-758 describes the function</u></p>  |
| selecting one of a plurality of document type definition types based upon the document type received; | <p><u>Exhibit A, pages 9-10 is the definition process of a typical DTD; step 6 refers to attributes of user input needed, e.g. "string" or "longtext"; and Exhibit A, page 13-14, shows an example of a servable DTD. Exhibit A, page 25, "Create new content" Here we are selecting a DTD based on the user selection of a document type. When the user has selected a type of document to create from the menu, the system retrieves the correct DTD from the "appropriate URL" and then generates the UI (template). Each URL represents a different DTD to use.</u></p> <p><u>Exhibit A, page 25 "Create new content" and Exhibit D, page 2 "Create New Fragment" and "Create New Page" sections. The user is presented with a list of types and selects one. The system selects the document type definition (DTD) corresponding to the chosen document type.</u></p> <p><u>Exhibit K at line 260-270</u><br/> <u>createFragment(String iv_name)</u><br/> <u>creates the appropriate fragment from the user selection. Comment before function (248-259) describes function action.</u></p> |
| parsing one or more of a plurality of   | <p><u>Exhibit A, pages 9-10 shows the plurality of</u></p>   |

|  |   |
|--|---|
| <p>elements in the document type definition type selected;</p> | <p>elements in a DTD. Pages in the Franklin specification of fragment and servable DTDs. Further Exhibit A, pages 9-10 refer to the UI types, i.e., requirements for user input and Pages Exhibit A, pages 13-14 show an example of a servable DTD.</p> <p>Exhibit A, page 25 "Editor UI Widgets" the DTD is parsed and based on the DATATYPE generates the UI widget. Here we see the mapping from DATATYPE to java widget (e.g., string =&gt; JTextField)</p> <p>Exhibit A, pages 13-14 shows an example of a servable DTD and the set of elements that makes up that servable DTD. The system parses this plurality of elements to create the user interface; an example of such a user interface is shown on the right panel of Exhibit I, page 2 under &lt;IMAGEFRAGMENT 3: title&gt;</p> <p>Exhibit L, lines 114-134)</p> <p>"/**</p> <p>* For the given DTD and content model node, create appropriate input widgets and add to the JPanel.</p> <p>...." this comment indicates the function <b>createInterfaceForModel</b> creates the widgets based on the DTD definition and the elements of the content. Describes use of DATATYPE to select the widget.</p> |
|--|---|

We, the undersigned, declare all of the above statements are made on our own knowledge, the above statements are true and correct, and the above statements are made on information that we believe to be true. We understand that false statements or concealment in obtaining a patent will subject us to fine and/or imprisonment or both (18 U.S.C. §1001) and may jeopardize the validity of the above identified patent application or any application issuing therefrom.

.....  
Louis WEITZMAN

.....  
Sara ELO DEAN

.....  
Dikran S. MELIKSETIAN

May/October \_\_, 2006  
\_\_, 2006

\_\_\_\_ May/October \_\_, 2006

\_\_\_\_ May/October

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|              |   |                      |                       |
|--------------|---|----------------------|-----------------------|
| Appl. No.    | : | 09/748,716           | Confirmation No. 5358 |
| Applicant    | : | Sara Elo DEAN et al. |                       |
| Filed        | : | December 22, 2000    |                       |
| TC/A.U.      | : | 2173                 |                       |
| Examiner     | : | Brian J. DETWILER    |                       |
| Docket No.   | : | POUG920000205US1     |                       |
| Customer No. | : | 23334                |                       |

37 C.F.R. 1.131 DECLARATION

I, each and every one of the undersigned inventors of the above-referenced patent application, hereby declare the following:

- 1) Claims 1-9, 11-31, and 33-39 in our above-identified patent application were rejected under 35 U.S.C. §102(e) and claims 10 and 32 were rejected under 35 U.S.C. § 103(a) based on U.S. Patent Publication No. 2002/0085020 A1 to Carroll, Jr., entitled "XML-Based Graphical User Interface Application Development Toolkit" filed on September 14, 2001, with a priority date of September 14, 2000 ("Carroll").
- 2) The invention described in the above-referenced patent application was reduced to a writing prior to the September 14, 2000 priority date of Carroll. In particular, *Franklin Content Management Prototype* documentation (exhibit A), upon which the above referenced patent application was based, is attached herewith. The documentation is a comprehensive specification and installation of the inventive system (see the table of contents of this document for the full detail) created and used by the inventors prior to the September 14, 2000 priority date of Carroll and demonstrating features of the presently claimed invention. It includes everything from an Installation guide, configuration, setup of the DB and a Franklin workspace for content management, setting up of users, roles, and includes code snippets of communication between components and error codes.
- 3) Additionally, the invention described in the above-referenced patent application was reduced to actual practice prior to the September 14, 2000 priority date of Carroll. Proof of actual reduction to practice upon which the presently claimed invention was based is attached herewith and will be described in detail below.
- 4) Submitted herewith as evidence of actual reduction to practice prior to the September 14, 2000 priority date of Carroll are the following exhibits:
  - Exhibit A) In particular, *Franklin Content Management Prototype* documentation (exhibit A), upon which the above referenced patent application was based, is attached herewith. (PDF File Pages 1-50)
  - Exhibit B) Assignments passed out to users prior to the September 14, 2000

priority date of Carroll to test users who were evaluating the integration between two systems: the present invention and "Kittyhawk" prior to the September 14, 2000 priority date of Carroll. The scenarios ask users to do different actions in the present invention's UI, which would show that there was a running system that could support users prior to the September 14, 2000 priority date of Carroll. The document describes the integration of the two systems, and shows the request/responses part of the communication between the two systems. (PDF File Pages 51-70)

- Exhibit C) A copy of a State chart of the invention's DB with each possible state of a fragment when stored in the invention's DB. The State chart was created and used by the inventors prior to the September 14, 2000 priority date of Carroll and demonstrates features of the presently claimed invention. (PDF File Pages 70-71)
- Exhibit D) Copies of HTML pages created by the inventors prior to the September 14, 2000 priority date of Carroll and demonstrating features of the presently claimed invention. The HTML pages describe to users how to install the inventive client and issue commands to manage documents, such as Check in, Check out, review, publish and describes the fragment/servable relationship to users. (PDF File Pages 72-75)
- Exhibit E) A synthesis of all feedback from a user acceptance testing of the Invention, run prior to the September 14, 2000 priority date of Carroll. It includes a list of things users liked and did not like, which evidences that users were using the running end-to-end inventive system with features of the presently claimed invention prior to the September 14, 2000 priority date of Carroll. (PDF File Pages 76-90)
- Exhibit F) A copy of brief notes identified during a code review of the invention's server code made prior to the September 14, 2000 priority date of Carroll. (PDF File Page 91)
- Exhibit G) An email correspondence to persons other than the inventors of the present invention, listing the internet address for accessing, and instructions on how to use, the working prototype system created and used by the inventors prior to September 14, 2000 priority date of Carroll and demonstrating features of the presently claimed invention. (PDF File Pages 92-94)
- Exhibit H) An email correspondence with reviewer feedback on the working prototype system created and used by the inventors prior to the September 14, 2000 priority date of Carroll and demonstrating features of the presently claimed invention. (PDF File Pages 95-98)
- Exhibit I) Copies of several screenshots of the working prototype system created and used by the inventors prior to September 14, 2000 priority date of Carroll and demonstrating features of the presently claimed invention. These screenshots show lists of XML documents having content objects and content fragments which are

- named and linked through the entry fields. (PDF File Pages 99-101)
- Exhibit J) A copy of a section of the source code file that was created and used by the inventors prior to September 14, 2000 priority date of Carroll and that implemented part of a working prototype system that performed features of the presently claimed invention. (PDF File Pages 102-103)
- Exhibit K) A copy of the source code FranklinEditor.java that was created and used by the inventors prior to September 14, 2000 priority date of Carroll and that implemented part of a working prototype system that performed features of the presently claimed invention. (PDF File Pages 1-31)
- Exhibit L) A copy of the source code InterfaceMaker.java that was created and used by the inventors prior to September 14, 2000 priority date of Carroll and that implemented part of a working prototype system that performed features of the presently claimed invention. (PDF File Pages 1-16)

- 5) The evidence submitted herewith supports the reduction to practice. The following table is submitted to show how each claim element is supported and that the test results unequivocally establish this software existed and worked for its intended purpose.

Claim1 is an example. The other independent claims (18, 23, & 39) recite identical limitations.

Claim 1: A method on an information processing unit for performing steps for assembling, with a user interface (UI), a document that conforms to a particular document type definition, the method comprising:

|  |   |
|--|---|
| receiving a user selection for a document type | <p>Exhibit B, page 3 under Scenario I, step 2.3, describes the step of creating the appropriate fragment <i>"Start the task to create the appropriate fragment, fill it in, and check it in."</i></p> <p>Exhibit A, page 25 "Create new content" paragraph shows the process of creating new content. Here the user must select a document type from the <b>File &gt; New Fragment</b> menu or the <b>File &gt; New Page</b> menu. These menus list all the available DTD types and it generates a template, for display in the UI, from the DTD selected.</p> <p>Exhibit A, page 25 "Create new content" and</p> |
|--|---|



|   |  |
|---|--|
|   | <p>Exhibit D, page 2 "Create New Fragment" and "Create New Page" sections describe the procedure that a user has to perform to select and create a new document abiding to a document type. The system point of view of this process is the "reception of a user selection for a document type".</p> <p>Exhibit K, line 1095 Function <b>getToolBarPane</b> shows creation of UI to allow user to select a "new fragment or page" Lines 1099-1105 creates the button to do the action. e.g., <code>iv_newButton.setToolTipText("Create new fragment or page");</code></p> <p>Exhibit K at line 760 Function <b>getFragmentTypeMenu</b> produces the menu for the user to select the type of DTD. Comment at 752-758 describes the function</p>   |
| selecting one of a plurality of document type definition types based upon the document type received; | <p>Exhibit A, page 25, "Create new content" Here we are selecting a DTD based on the user selection of a document type. When the user has selected a type of document to create from the menu, the system retrieves the correct DTD from the "appropriate URL" and then generates the UI (template). Each URL represents a different DTD to use.</p> <p>Exhibit A, page 25 "Create new content" and Exhibit D, page 2 "Create New Fragment" and "Create New Page" sections. The user is presented with a list of types and selects one. The system selects the document type definition (DTD) corresponding to the chosen document type.</p> <p>Exhibit K at line 260-270 <b>createFragment(String lv_name)</b> creates the appropriate fragment from the user selection. Comment before function (248-259) describes function action.</p> |
| parsing one or more of a plurality of elements in the document type definition type selected;         | <p>Exhibit A, pages 9-10 shows the plurality of elements in a DTD in the Franklin specification of fragment and servable DTDs. Further Exhibit A, pages 9-10 refer to the UI types, i.e., requirements for user input and</p>  |

Exhibit A, pages 13-14 show an example of a servable DTD.

Exhibit A, page 25 "Editor UI Widgets" the DTD is parsed and based on the DATATYPE generates the UI widget. Here we see the mapping from DATATYPE to java widget (e.g., string => JTextField)

Exhibit A, pages 13-14 shows an example of a servable DTD and the set of elements that makes up that servable DTD. The system parses this plurality of elements to create the user interface; an example of such a user interface is shown on the right panel of Exhibit I, page 2 under <IMAGEFRAGMENT 3: title>

Exhibit L, lines 114-134)

"/\*\*  
\* For the given DTD and content model node, create appropriate input widgets and add to the JPanel.

...." this comment indicates the function **createInterfaceForModel** creates the widgets based on the DTD definition and the elements of the content. Describes use of DATATYPE to select the widget.

We, the undersigned, declare all of the above statements are made on our own knowledge, the above statements are true and correct, and the above statements are made on information that we believe to be true. We understand that false statements or concealment in obtaining a patent will subject us to fine and/or imprisonment or both (18 U.S.C. §1001) and may jeopardize the validity of the above identified patent application or any application issuing therefrom.

  
Louis WERTZMAN

October 4, 2006

  
Sara ELO DEAN

October \_\_, 2006

  
Dikran S. MELIKSETIAN

October \_\_, 2006

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|              |   |                      |                       |
|--------------|---|----------------------|-----------------------|
| Appl. No.    | : | 09/748,716           | Confirmation No. 5358 |
| Applicant    | : | Sara Eio DEAN et al. |                       |
| Filed        | : | December 22, 2000    |                       |
| TC/A.U.      | : | 2173                 |                       |
| Examiner     | : | Brian J. DETWILER    |                       |
| Docket No.   | : | POUG920000205US1     |                       |
| Customer No. | : | 23334                |                       |

37 C.F.R. 1.131 DECLARATION

I, each and every one of the undersigned inventors of the above-referenced patent application, hereby declare the following:

- 1) Claims 1-9, 11-31, and 33-39 in our above-identified patent application were rejected under 35 U.S.C. §102(e) and claims 10 and 32 were rejected under 35 U.S.C. § 103(a) based on U.S. Patent Publication No. 2002/0085020 A1 to Carroll, Jr., entitled "XML-Based Graphical User Interface Application Development Toolkit" filed on September 14, 2001, with a priority date of September 14, 2000 ("Carroll").
- 2) The invention described in the above-referenced patent application was reduced to a writing prior to the September 14, 2000 priority date of Carroll. In particular, *Franklin Content Management Prototype* documentation (exhibit A), upon which the above referenced patent application was based, is attached herewith. The documentation is a comprehensive specification and installation of the inventive system (see the table of contents of this document for the full detail) created and used by the inventors prior to the September 14, 2000 priority date of Carroll and demonstrating features of the presently claimed invention. It includes everything from an Installation guide, configuration, setup of the DB and a Franklin workspace for content management, setting up of users, roles, and includes code snippets of communication between components and error codes.
- 3) Additionally, the invention described in the above-referenced patent application was reduced to actual practice prior to the September 14, 2000 priority date of Carroll. Proof of actual reduction to practice upon which the presently claimed invention was based is attached herewith and will be described in detail below.
- 4) Submitted herewith as evidence of actual reduction to practice prior to the September 14, 2000 priority date of Carroll are the following exhibits:
  - Exhibit A) In particular, *Franklin Content Management Prototype* documentation (exhibit A), upon which the above referenced patent application was based, is attached herewith. (PDF File Pages 1-50)
  - Exhibit B) Assignments passed out to users prior to the September 14, 2000

- priority date of Carroll to test users who were evaluating the integration between two systems: the present invention and "Kittyhawk" prior to the September 14, 2000 priority date of Carroll. The scenarios ask users to do different actions in the present invention's UI, which would show that there was a running system that could support users prior to the September 14, 2000 priority date of Carroll. The document describes the integration of the two systems, and shows the request/responses part of the communication between the two systems. (PDF File Pages 51-70)
- Exhibit C) A copy of a State chart of the invention's DB with each possible state of a fragment when stored in the invention's DB. The State chart was created and used by the inventors prior to the September 14, 2000 priority date of Carroll and demonstrates features of the presently claimed invention. (PDF File Pages 70-71)
- Exhibit D) Copies of HTML pages created by the inventors prior to the September 14, 2000 priority date of Carroll and demonstrating features of the presently claimed invention. The HTML pages describe to users how to install the inventive client and issue commands to manage documents, such as Check in, Check out, review, publish and describes the fragment/servable relationship to users. (PDF File Pages 72-75)
- Exhibit E) A synthesis of all feedback from a user acceptance testing of the Invention, run prior to the September 14, 2000 priority date of Carroll. It includes a list of things users liked and did not like, which evidences that users were using the running end-to-end inventive system with features of the presently claimed invention prior to the September 14, 2000 priority date of Carroll. (PDF File Pages 76-90)
- Exhibit F) A copy of brief notes identified during a code review of the Invention's server code made prior to the September 14, 2000 priority date of Carroll. (PDF File Page 91)
- Exhibit G) An email correspondence to persons other than the inventors of the present invention, listing the internet address for accessing, and instructions on how to use, the working prototype system created and used by the inventors prior to September 14, 2000 priority date of Carroll and demonstrating features of the presently claimed invention. (PDF File Pages 92-94)
- Exhibit H) An email correspondence with reviewer feedback on the working prototype system created and used by the inventors prior to the September 14, 2000 priority date of Carroll and demonstrating features of the presently claimed invention. (PDF File Pages 95-98)
- Exhibit I) Copies of several screenshots of the working prototype system created and used by the inventors prior to September 14, 2000 priority date of Carroll and demonstrating features of the presently claimed invention. These screenshots show lists of XML documents having content objects and content fragments which are

- named and linked through the entry fields. (PDF File Pages 99-101)
- Exhibit J) A copy of a section of the source code file that was created and used by the inventors prior to September 14, 2000 priority date of Carroll and that implemented part of a working prototype system that performed features of the presently claimed invention. (PDF File Pages 102-103)
- Exhibit K) A copy of the source code FranklinEditor.java that was created and used by the inventors prior to September 14, 2000 priority date of Carroll and that implemented part of a working prototype system that performed features of the presently claimed invention. (PDF File Pages 1-31)
- Exhibit L) A copy of the source code InterfaceMaker.java that was created and used by the inventors prior to September 14, 2000 priority date of Carroll and that implemented part of a working prototype system that performed features of the presently claimed invention. (PDF File Pages 1-16)

- 5) The evidence submitted herewith supports the reduction to practice. The following table is submitted to show how each claim element is supported and that the test results unequivocally establish this software existed and worked for its intended purpose.

Claim1 is an example. The other independent claims (18, 23, & 39) recite identical limitations.

Claim 1: A method on an information processing unit for performing steps for assembling, with a user interface (UI), a document that conforms to a particular document type definition, the method comprising:

|  |   |
|--|---|
| receiving a user selection for a document type | <p>Exhibit B, page 3 under Scenario I, step 2.3, describes the step of creating the appropriate fragment "<i>Start the task to create the appropriate fragment, fill it in, and check it in.</i>"</p> <p>Exhibit A, page 25 "Create new content" paragraph shows the process of creating new content. Here the user must select a document type from the <b>File &gt; New Fragment</b> menu or the <b>File &gt; New Page</b> menu. These menus list all the available DTD types and it generates a template, for display in the UI, from the DTD selected.</p> <p>Exhibit A, page 25 "Create new content" and</p> |
|--|---|

|   |  |
|---|--|
|   | <p>Exhibit D, page 2 "Create New Fragment" and "Create New Page" sections describe the procedure that a user has to perform to select and create a new document abiding to a document type. The system point of view of this process is the "reception of a user selection for a document type".</p> <p>Exhibit K, line 1095 Function <b>getToolBarPane</b> shows creation of UI to allow user to select a "new fragment or page" Lines 1099-1105 creates the button to do the action. e.g., <code>iv_newButton.setTooltipText ("Create new fragment or page");</code></p> <p>Exhibit K at line 760 Function <b>getFragmentTypeMenu</b> produces the menu for the user to select the type of DTD. Comment at 752-758 describes the function</p>  |
| selecting one of a plurality of document type definition types based upon the document type received; | <p>Exhibit A, page 25, "Create new content" Here we are selecting a DTD based on the user selection of a document type. When the user has selected a type of document to create from the menu, the system retrieves the correct DTD from the "appropriate URL" and then generates the UI (template). Each URL represents a different DTD to use.</p> <p>Exhibit A, page 25 "Create new content" and Exhibit D, page 2 "Create New Fragment" and "Create New Page" sections. The user is presented with a list of types and selects one. The system selects the document type definition (DTD) corresponding to the chosen document type.</p> <p>Exhibit K at line 260-270 <b>createFragment</b>(String iv_name) creates the appropriate fragment from the user selection. Comment before function (248-259) describes function action.</p> |
| parsing one or more of a plurality of elements in the document type definition type selected;         | <p>Exhibit A, pages 9-10 shows the plurality of elements in a DTD in the Franklin specification of fragment and servable DTDs. Further Exhibit A, pages 9-10 refer to the UI types, i.e., requirements for user input and</p>  |

|  |  |
|--|--|
|  | <p>Exhibit A, pages 13-14 show an example of a servable DTD.</p> <p>Exhibit A, page 25 "Editor UI Widgets" the DTD is parsed and based on the DATATYPE generates the UI widget. Here we see the mapping from DATATYPE to java widget (e.g., string =&gt; JTextField)</p> <p>Exhibit A, pages 13-14 shows an example of a servable DTD and the set of elements that makes up that servable DTD. The system parses this plurality of elements to create the user interface; an example of such a user interface is shown on the right panel of Exhibit I, page 2 under &lt;IMAGEFRAGMENT 3: title&gt;</p> <p>Exhibit L, lines 114-134)</p> <p>/**</p> <p>* For the given DTD and content model node, create appropriate input widgets and add to the JPanel.</p> <p>...." this comment indicates the function createInterfaceForModel creates the widgets based on the DTD definition and the elements of the content. Describes use of DATATYPE to select the widget.</p> |
|--|--|

We, the undersigned, declare all of the above statements are made on our own knowledge, the above statements are true and correct, and the above statements are made on information that we believe to be true. We understand that false statements or concealment in obtaining a patent will subject us to fine and/or imprisonment or both (18 U.S.C. §1001) and may jeopardize the validity of the above identified patent application or any application issuing therefrom.

\_\_\_\_\_  
Louis WEITZMAN

..... *Sara Elo Dean* .....  
Sara ELO DEAN

\_\_\_\_\_  
Dikran S. MELIKSETIAN

October \_\_, 2006

October 9, 2006

October \_\_, 2006

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|              |   |                      |                       |
|--------------|---|----------------------|-----------------------|
| Appl. No.    | : | 09/748,716           | Confirmation No. 5358 |
| Applicant    | : | Sara Elo DEAN et al. |                       |
| Filed        | : | December 22, 2000    |                       |
| TC/A.U.      | : | 2173                 |                       |
| Examiner     | : | Brian J. DETWILER    |                       |
| Docket No.   | : | POUG920000205US1     |                       |
| Customer No. | : | 23334                |                       |

37 C.F.R. 1.131 DECLARATION

I, each and every one of the undersigned inventors of the above-referenced patent application, hereby declare the following:

- 1) Claims 1-9, 11-31, and 33-39 in our above-identified patent application were rejected under 35 U.S.C. §102(e) and claims 10 and 32 were rejected under 35 U.S.C. § 103(a) based on U.S. Patent Publication No. 2002/0085020 A1 to Carroll, Jr., entitled "XML-Based Graphical User Interface Application Development Toolkit" filed on September 14, 2001, with a priority date of September 14, 2000 ("Carroll").
- 2) The invention described in the above-referenced patent application was reduced to a writing prior to the September 14, 2000 priority date of Carroll. In particular, *Franklin Content Management Prototype* documentation (exhibit A), upon which the above referenced patent application was based, is attached herewith. The documentation is a comprehensive specification and installation of the inventive system (see the table of contents of this document for the full detail) created and used by the inventors prior to the September 14, 2000 priority date of Carroll and demonstrating features of the presently claimed invention. It includes everything from an Installation guide, configuration, setup of the DB and a Franklin workspace for content management, setting up of users, roles, and includes code snippets of communication between components and error codes.
- 3) Additionally, the invention described in the above-referenced patent application was reduced to actual practice prior to the September 14, 2000 priority date of Carroll. Proof of actual reduction to practice upon which the presently claimed invention was based is attached herewith and will be described in detail below.
- 4) Submitted herewith as evidence of actual reduction to practice prior to the September 14, 2000 priority date of Carroll are the following exhibits:
  - Exhibit A) In particular, *Franklin Content Management Prototype* documentation (exhibit A), upon which the above referenced patent application was based, is attached herewith. (PDF File Pages 1-50)
  - Exhibit B) Assignments passed out to users prior to the September 14, 2000



priority date of Carroll to test users who were evaluating the integration between two systems: the present invention and "Kittyhawk" prior to the September 14, 2000 priority date of Carroll. The scenarios ask users to do different actions in the present invention's UI, which would show that there was a running system that could support users prior to the September 14, 2000 priority date of Carroll. The document describes the integration of the two systems, and shows the request/responses part of the communication between the two systems. (PDF File Pages 51-70)

- Exhibit C) A copy of a State chart of the invention's DB with each possible state of a fragment when stored in the invention's DB. The State chart was created and used by the inventors prior to the September 14, 2000 priority date of Carroll and demonstrates features of the presently claimed invention. (PDF File Pages 70-71)
- Exhibit D) Copies of HTML pages created by the inventors prior to the September 14, 2000 priority date of Carroll and demonstrating features of the presently claimed invention. The HTML pages describe to users how to install the inventive client and issue commands to manage documents, such as Check in, Check out, review, publish and describes the fragment/servable relationship to users. (PDF File Pages 72-75)
- Exhibit E) A synthesis of all feedback from a user acceptance testing of the invention, run prior to the September 14, 2000 priority date of Carroll. It includes a list of things users liked and did not like, which evidences that users were using the running end-to-end inventive system with features of the presently claimed invention prior to the September 14, 2000 priority date of Carroll. (PDF File Pages 76-90)
- Exhibit F) A copy of brief notes identified during a code review of the invention's server code made prior to the September 14, 2000 priority date of Carroll. (PDF File Page 91)
- Exhibit G) An email correspondence to persons other than the inventors of the present invention, listing the internet address for accessing, and instructions on how to use, the working prototype system created and used by the inventors prior to September 14, 2000 priority date of Carroll and demonstrating features of the presently claimed invention. (PDF File Pages 92-94)
- Exhibit H) An email correspondence with reviewer feedback on the working prototype system created and used by the inventors prior to the September 14, 2000 priority date of Carroll and demonstrating features of the presently claimed invention. (PDF File Pages 95-98)
- Exhibit I) Copies of several screenshots of the working prototype system created and used by the inventors prior to September 14, 2000 priority date of Carroll and demonstrating features of the presently claimed invention. These screenshots show lists of XML documents having content objects and content fragments which are

- named and linked through the entry fields. (PDF File Pages 99-101)
- Exhibit J) A copy of a section of the source code file that was created and used by the inventors prior to September 14, 2000 priority date of Carroll and that implemented part of a working prototype system that performed features of the presently claimed invention. (PDF File Pages 102-103)
- Exhibit K) A copy of the source code FranklinEditor.java that was created and used by the inventors prior to September 14, 2000 priority date of Carroll and that implemented part of a working prototype system that performed features of the presently claimed invention. (PDF File Pages 1-31)
- Exhibit L) A copy of the source code InterfaceMaker.java that was created and used by the inventors prior to September 14, 2000 priority date of Carroll and that implemented part of a working prototype system that performed features of the presently claimed invention. (PDF File Pages 1-16)

- 5) The evidence submitted herewith supports the reduction to practice. The following table is submitted to show how each claim element is supported and that the test results unequivocally establish this software existed and worked for its intended purpose.

Claim1 is an example. The other independent claims (18, 23, & 39) recite identical limitations.

Claim 1: A method on an information processing unit for performing steps for assembling, with a user interface (UI), a document that conforms to a particular document type definition, the method comprising:

|  |   |
|--|---|
| receiving a user selection for a document type | <p>Exhibit B, page 3 under Scenario I, step 2.3, describes the step of creating the appropriate fragment <i>"Start the task to create the appropriate fragment, fill it in, and check it in."</i></p> <p>Exhibit A, page 25 "Create new content" paragraph shows the process of creating new content. Here the user must select a document type from the <b>File &gt; New Fragment</b> menu or the <b>File &gt; New Page</b> menu. These menus list all the available DTD types and it generates a template, for display in the UI, from the DTD selected.</p> <p>Exhibit A, page 25 "Create new content" and</p> |
|--|---|

|   |  |
|---|--|
|   | <p>Exhibit D, page 2 "Create New Fragment" and "Create New Page" sections describe the procedure that a user has to perform to select and create a new document abiding to a document type. The system point of view of this process is the "reception of a user selection for a document type".</p> <p>Exhibit K, line 1095 Function <b>getToolBarPane</b> shows creation of UI to allow user to select a "new fragment or page" Lines 1099-1105 creates the button to do the action. e.g., <code>iv_newButton.setTooltipText("Create new fragment or page");</code></p> <p>Exhibit K at line 760 Function <b>getFragmentTypeMenu</b> produces the menu for the user to select the type of DTD. Comment at 752-758 describes the function</p>   |
| selecting one of a plurality of document type definition types based upon the document type received; | <p>Exhibit A, page 25, "Create new content" Here we are selecting a DTD based on the user selection of a document type. When the user has selected a type of document to create from the menu, the system retrieves the correct DTD from the "appropriate URL" and then generates the UI (template). Each URL represents a different DTD to use.</p> <p>Exhibit A, page 25 "Create new content" and Exhibit D, page 2 "Create New Fragment" and "Create New Page" sections. The user is presented with a list of types and selects one. The system selects the document type definition (DTD) corresponding to the chosen document type.</p> <p>Exhibit K at line 260-270 <b>createFragment(String iv_name)</b> creates the appropriate fragment from the user selection. Comment before function (248-259) describes function action.</p> |
| parsing one or more of a plurality of elements in the document type definition type selected;         | <p>Exhibit A, pages 9-10 shows the plurality of elements in a DTD in the Franklin specification of fragment and servable DTDs. Further Exhibit A, pages 9-10 refer to the UI types, i.e., requirements for user input and</p>  |

|  |   |
|--|---|
|  | <p>Exhibit A, pages 13-14 show an example of a servable DTD.</p> <p>Exhibit A, page 25 "Editor UI Widgets" the DTD is parsed and based on the DATATYPE generates the UI widget. Here we see the mapping from DATATYPE to java widget (e.g., string =&gt; JTextField)</p> <p>Exhibit A, pages 13-14 shows an example of a servable DTD and the set of elements that makes up that servable DTD. The system parses this plurality of elements to create the user interface; an example of such a user interface is shown on the right panel of Exhibit I, page 2 under &lt;IMAGEFRAGMENT 3: title&gt;</p> <p>Exhibit L, lines 114-134)<br/> <del>*/</del><br/>       * For the given DTD and content model node, create appropriate input widgets and add to the JPanel.<br/>       ...." this comment indicates the function <b>createInterfaceForModel</b> creates the widgets based on the DTD definition and the elements of the content. Describes use of DATATYPE to select the widget.</p> |
|--|---|

We, the undersigned, declare all of the above statements are made on our own knowledge, the above statements are true and correct, and the above statements are made on information that we believe to be true. We understand that false statements or concealment in obtaining a patent will subject us to fine and/or imprisonment or both (18 U.S.C. §1001) and may jeopardize the validity of the above identified patent application or any application issuing therefrom.

\_\_\_\_\_  
 Louis WEITZMAN

\_\_\_\_\_  
 Sara ELO DEAN

\_\_\_\_\_  
  
 Dikran S. MELIKSETIAN

October \_\_, 2006

October \_\_, 2006

October 04 2006

# Franklin Content Management Prototype

Documentation

Draft May 2000

IBM Confidential

IBM Advanced Internet Technology Group (WebAhead)

For more information, contact

Sara Elo ([saraelo@us.ibm.com](mailto:saraelo@us.ibm.com)) or

Dikran Meliksetian ([meliksd1@us.ibm.com](mailto:meliksd1@us.ibm.com))

Franklin team members:

Peter Davis

Sara Elo

Abel Henry

Dikran Meliksetian

Jeff Milton

Louis Weitzman

Jessica Wu

Joe Zhou

A

## Table of Contents

|  |    |
|--|----|
| Overview.....  | 4  |
| System Setup & Configuration .....                         | 5  |
| Step 1: Install Franklin Server.....                       | 5  |
| Step 2: Install DB2 for Meta-Data Store.....               | 6  |
| Step 3: Customize Server Initialization Files.....         | 6  |
| Step 4: Configure WebSphere Application Server .....       | 7  |
| Step 5: Install Franklin Client .....                      | 8  |
| Step 6: Define Document Type Definitions (DTD) .....       | 9  |
| Step 7: Define Style Sheets .....                          | 15 |
| Step 8: Create Directory Structure .....                   | 19 |
| Step 9: Configure Web Server .....                         | 19 |
| Step 10: Define Roles & Users .....                        | 20 |
| Editor Interface & Dispatcher Communication .....          | 21 |
| Login .....  | 22 |
| Create new content.....                                    | 25 |
| Editor UI Widgets .....                                    | 25 |
| Check-in of New Fragment.....                              | 25 |
| Check-In of Modified Fragment.....                         | 27 |
| Check-out.....   | 28 |
| Search.....  | 29 |
| Preview .....  | 32 |
| Dispatcher .....   | 32 |
| Session Management .....                                   | 32 |
| System Data Creation .....                                 | 32 |
| Name Space Management.....                                 | 33 |
| Coordination Between Modules at Check-in.....              | 34 |
| Lock Management .....                                      | 34 |
| Error Handling .....                                       | 35 |
| Meta Data Store .....                                      | 35 |
| DB2 XML Extenders .....                                    | 35 |
| Table Design .....   | 38 |
| Index .....  | 39 |
| Search.....  | 40 |
| Lock Management .....                                      | 41 |
| The Content Store – Daedalus (a.k.a Trigger Monitor) ..... | 42 |
| Extension Parser.....                                      | 42 |
| Dependency Parser.....                                     | 42 |
| Page Assembler.....  | 43 |
| Chaining of Trigger Monitors.....                          | 43 |
| Example application.....                                   | 44 |
| Summary .....  | 44 |
| Appendix 1: Error Codes .....                              | 44 |



## Overview

Content on the Next Generation internet needs to be highly adaptive. New interfaces and devices are emerging, the diversity of users is increasing, machines are acting more and more on users' behalf, and net activities are possible for a wide range of business, leisure, education, and research activities.

To achieve maximum flexibility and reuse, content needs to be broken down into richly tagged fragments that can be combined and rendered appropriately for the user, task, and context. The Franklin content management prototype builds on this premise. It provides an end-to-end process from content creation and meta-tagging to quality assurance and publishing.

Franklin integrates several IBM technologies for its five components: content store, meta-data store, dispatcher, services and user interfaces. A high-level view of the components is shown in Figure 1: Franklin Components.

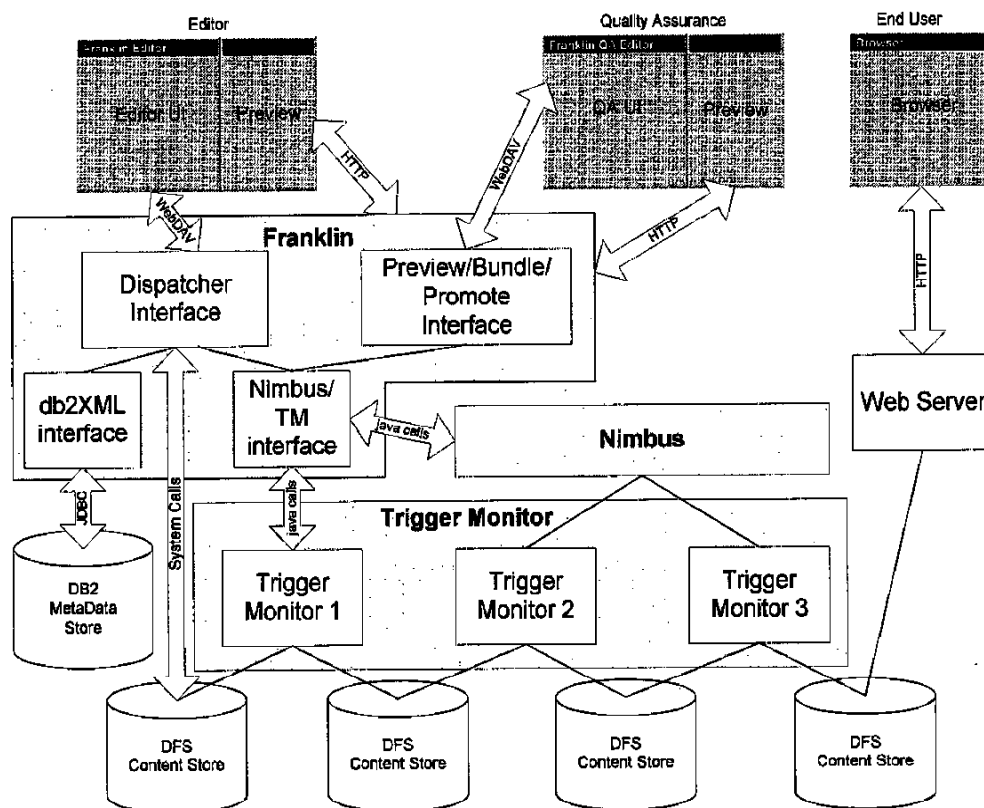


Figure 1: Franklin Components



The content store builds upon the Daedalus (a.k.a Trigger Monitor) technology from IBM Watson Research. [For full specification, see <http://w3.watson.ibm.com/~challngr/papers/daedalus/index.html>] Daedalus is designed to manage high numbers of rapidly changing content fragments. By maintaining an Object Dependency Graph, and by detecting changes to content, it manages pages on a web server or cached in a network router in a timely manner.

The meta-data store manages tags that describe the functional and semantic role of each content fragment within the information collection. They may describe what the content is about, who the target audience is, and its relationship to a taxonomy or other fragments. The meta-data store also supports efficient searches.

Networked services support the editor in content creation. They may assist the editor in meta-data creation, classification, summarization or translation. Instead of doing the task from beginning to end, the editor can accept, reject or modify the suggestions created by a service.

The dispatcher's task is to delegate incoming requests to the content store, meta-data store and the services. The dispatcher presents a consistent application programming interface to the user interfaces. This Franklin API abides to the Web protocol for Distributed Authoring and Versioning (WebDAV) and to the Distributed Authoring Search Language (DASL) specification.

The user interfaces communicate with the Franklin system through the API. Using the Editor UI, an editor can create and edit XML content fragments, upload XSL style sheets and multimedia objects, compose pages out of fragments, preview pages, review final published pages, and reject them or promote them to the final stage in the publishing flow.

The Franklin system has also been integrated with KittyHawk, an IBM Notes based workflow engine. This workflow module can be turned on or off depending on the application needs.

This document describes in detail the system requirements and setup, the architecture, components and features of Franklin. It covers the lessons learned, and provides a working example of a content collection managed with Franklin. In addition, it describes a lightweight version of Franklin, code-named Franklin Light, which satisfies the needs of small sites with no need for multiple Quality Assurance steps, or a scalable DB2 based search.

## **System Setup & Configuration**

Before running an instance of Franklin to manage the content for a web site, you need to complete a number of installation steps. You also need to define the DTDs, the XSL style sheets, and the site map of the web site you intend to manage. This section outlines the required steps.

### **Step 1: Install Franklin Server**

The Franklin Server runs on an AIX or NT server and requires the following software installed on the same machine:

- Apache Web Server v.1.3.6 or higher
- WebSphere Application Server v.2.0 or higher
- Java run-time environment 1.1.8

The Franklin server is distributed as a jar file, i.e., Franklin.jar. The distribution directory contains the following jar files that are required by Franklin: xml4j.jar, patbin132.jar, daedalus.jar, lotusxsl.jar, xerces.jar.

Deleted:

Download the Franklin Server and associated components from <http://franklin.adtech.internet.ibm.com/franklin/downloads/index.html> and place them in a directory accessible by the WebSphere Application Server.

## Step 2: Install DB2 for Meta-Data Store

The DB2 database used by the Meta-data Store can run on the same machine or a different machine. It requires the following software:

- 1) DB2 6.1 with DB2 XML Extender 7.1  
Download DB2 XML Extenders 7.1 from IBM software website at <http://www.software.ibm.com/db2>. Currently, XML Extenders is supported on Windows NT, AIX and Solaris. If you decide to use the XML Extender Administration Wizard make sure you review the XML Extender Administration Wizard Readme file to ensure you have the software prerequisites, JDK 1.1.x or JRE v1.1.x and JFC 1.1 with Swing 1.1 or later.
- 2) JDBC for DB2 JDBC 1.20  
JDBC is included in the DB2 installation (db2java.zip) in the directory of sqllib/java.

The steps to install DB2 and enable DB2 XML Extenders (which require root authority on AIX):

- 1) Install a version of UDB higher than 5.2. We have tested DB2 XML on NT for UDB 5.2 and 6.1, and on AIX for UDB 6.1 for DB2 XML XColumn function.
- 2) Create a DB2 instance. In the included examples, we use the db2 instance name db2frnkl.
- 3) Install DB2 XML Extenders
- 4) Create a database in the instance. Also, create the tables and indexes based on the sample scripts we have provided.
- 5) Enable the database with XML Extenders
- 6) Start JDBC on a port. For example, "db2jstrt 4000" opens port 4000 for JDBC connections.

## Step 3: Customize Server Initialization Files

Edit *franklinServletInitialization.properties* file and set the following variable to the desired directory in your setup:

*baseDir* – base directory for all Franklin related files.

Comment [LW1]: Should we name the properties files differently? E.g. franklinClient.properties vs franklinServer.properties?

All other variables in *franklinServletInitialization.properties* are relative to *baseDir* and should not be changed:

*dtdDir* - directory for DTD and entity files

*xmlDir* - root of the directory hierarchy for XML files

*assetsDir* - directory for all directories browsable by client UI, i.e. *xslDir*, *publishDir*, *multimediaDir*  
*xslDir* - directory for XSL style sheets  
*publishDir* - root of the directory hierarchy for HTML, HDML or DHTML files  
*multimediaDir* - root of the directory hierarchy for images, graphics, video and audio files

Edit *metastore.ini* file and set the following variables to the desired directory in your setup:

*MetaStoreServerIP* - database host machine name  
*MetaStoreServerPort* - JDBC port number  
*MetaStoreServerDBName* - database name  
*MetaStoreServerUserID* - database user name  
*MetaStoreServerPassword* - database password for the above user  
*MetaStoreServerDriverClassName* - database JDBC driver name  
*MetaStoreServerInitialConnection* - number of initial connections to the database  
*MetaStoreServerIncrement* - number of additional connections to database  
*MetaStoreCheckInXMLDir* - temporary directory for XML files checked into meta store  
*MetaStoreDADDir* - directory for DAD files  
*MetaStoreCacheSearchDir* - directory for cached XML Search results

#### Step 4: Configure WebSphere Application Server

Start the WebSphere Administrative Console, refer to the WebSphere Quick Beginnings guide for details

1. In the Tasks tab of the console, select Configure a Web Application and click the start task button
  - a. Specify the Web Application Name, e.g., FranklinServer, click Next.
  - b. Choose the servlet engine, e.g., the ServletEngine in the Default Server of the Default Host, click Next
  - c. Specify the Web Application Web Path, e.g., /franklinserver, click Next
  - d. Specify the CLASSPATH:
    - i. Add each of the jar files in the Franklin distribution to the classpath, i.e., franklin.jar, daedalus.jar, xml4j.jar, lotusxsl.jar, xerces.jar, patbin132.zip
    - ii. Add the db2java.zip file to the classpath, the db2java.zip file is distributed with DB2, it is found under the sqllib/java subdirectory of the database instance home directory
    - iii. Click Finished
2. In the same Tasks tab, select Add a Servlet and click the start task button
  - a. Select Yes to "Do you want to select an existing Servlet jar file or Directory that contains Servlet classes" and click Next
  - b. Specify the path of the directory where franklin.jar is located, click Next
  - c. Select the Web Application that was created in the previous step, click Next
  - d. Select the Create User-Defined Servlet option, click Next
  - e. Specify the Servlet Name, e.g., dispatcher
  - f. Specify the Servlet Class Name as com.ibm.adtech.franklin.server.dispatcher.Dispatcher

- g. Specify the Servlet Web Path List, for example /franklinserver/dispatcher, this is the web path that should be used by the client to access the franklin server, click next
- h. Add an init parameter with Init Parm Name as baseDir and Init Parm Value equal to the directory where the franklin server configuration files are stored, e.g., /franklin/data/config
- i. Select the True option for Load at Startup; click Finished
3. The configuration is complete you need to start the service, select the Topology tab
  - a. Prior to starting the application, make sure that the database instance is running and that jdbc daemon is active (see previous section)
  - b. Expand the topology tree and select the newly created application. The application will appear under the servlet engine that was selected in step 1.b
  - c. Right click the selection and on the popup menu select Restart Application
4. The Franklin Server should be available at this point. In order to verify that everything is in order view the log files of WebSphere

### Step 5: Install Franklin Client

The Franklin Client Java Application has been tested on Windows98/2000/NT.

Download the Franklin Client Application Installer FranklinEditor.exe from <http://franklin.adtech.internet.ibm.com/franklin/downloads/index.html> and run it. In addition to the Franklin Client, the following Java packages are required and are automatically installed by the Installer:

- Java 1.1.8 run-time environment with Swing JFC1.1.1
- XML4J package
- WebDav package

The Franklin Client Application Installer also creates the subdirectories required by the client under the chosen installation directory. You can change these directories as described in the next paragraph.

After installation, customize the initialization file *franklin.properties* located in the root directory where you installed the Franklin Client application. You need to edit the variable *browserPath* to define the location of the web browser you wish to use to preview pages. Also, you can edit the variable *tempDir* if you wish to change the directory where temporary files are stored.

```

dispatcher          = http://adtech.ibm.us2.ibm.com/franklinservlet/
initXMLFile         = xml/franklin_init.xml
## modify browserPath to point to the web browser you wish to use for preview
browserPath         = c:/Program Files/Internet Explorer/ieexplore.exe
## modify tempDir to point to the directory where temporary files will be stored
tempDir             = ./tmp/
tempMediaDir        = media/
tempHTMLDir         = html/
tempXSLDir          = xsl/
standaloneP         = false
validateP           = true

```

**Comment [LW2]:** Should variable names in the client properties file be more similar to the names of the variables in the dispatcher's properties file

## Step 6: Define Document Type Definitions (DTD)

Franklin manages two types of content objects, *fragments* and *servables*.

A fragment is a content object that can be reused on several pages:

- a *simple fragment* is a self contained XML file containing text data and metadata – for example, a product specification
- a *compound fragment* is an XML file that contains metadata and points to an accompanying file such as a video or image file, an XSL style sheet, or a hand-crafted HTML page
- an *index fragment* is an automatically updated XML file that indexes any number of servables - for example a panel listing the five latest press release [Future: index fragments not available in current implementation]

A servable is an XML file that contains the text and meta-data for one final published page and imports reusable content from one or more fragments, and points to one of more style sheet fragments.

Figure 2 shows a product page servable which includes content from six fragments, namely three text fragments, one image fragment and two style sheet fragments, and results in two final published pages.

Insert Figure 2 here

Before beginning to manage a content collection, you need to define the document type definitions, or DTDs, for each class of fragment and servable that will be managed by the application. Franklin uses the syntax of DTDs to define a document type. [See the XML specification at <http://www.w3.org/TR/REC-xml>]

In order for Franklin to manage DTDs correctly, all DTDs must abide to the Franklin following specifications:

### Franklin specification of fragment and servable DTDs

1. The root element, to which you can give a meaningful name, must have a child node called **SYSTEM** with the children nodes **FRAGMENTID**, **CREATOR**, **MODIFIER**, **CREATIONTIME**, **LASTMODIFIEDTIME**, **PAGETYPE** and **CONTENTSIZE**. The **NAME** attribute of **PAGETYPE** must be set to either "FRAGMENT" or "SERVABLE".

```
<!ELEMENT ROOT          (SYSTEM, ...)>

<!ELEMENT SYSTEM        (FRAGMENTID,
                          CREATIONTIME,
                          LASTMODIFIEDTIME,
                          CREATOR,
                          MODIFIER,
                          PAGETYPE
                          CONTENTSIZE?)>
```

```

<!ELEMENT FRAGMENTID      (#PCDATA)>
<!ELEMENT CREATIONTIME    (#PCDATA)>
<!ELEMENT LASTMODIFIEDTIME (#PCDATA)>
<!ELEMENT CREATOR         (#PCDATA)>
<!ELEMENT MODIFIER        (#PCDATA)>
<!ELEMENT CONTENTSIZE     (#PCDATA)>
<!ELEMENT PAGETYPE        (#PCDATA)>
<!ATTLIST PAGETYPE        NAME (FRAGMENT|SERVABLE) "FRAGMENT" #FIXED>

```

2. All items editable in the Editor UI need to be elements of the DTD, not attributes. For example,

```

<!ELEMENT TITLE            (#PCDATA)>
<!ELEMENT SHORTDESCRIPTION (#PCDATA)>
<!ELEMENT CATEGORY        (#PCDATA)>

```

3. All elements to be indexed for search must be of type PCDATA, and must contain the attribute SEARCH set to YES. For example,

```

<!ELEMENT ROOT            (TITLE, SHORTDESCRIPTION, CATEGORY, ...)>
<!ELEMENT TITLE           (#PCDATA)>
<!ELEMENT SHORTDESCRIPTION (#PCDATA)>
<!ELEMENT CATEGORY        (#PCDATA)>
<!ATTLIST TITLE           SEARCH (YES|NO) "YES" #FIXED>
<!ATTLIST SHORTDESCRIPTION SEARCH (YES|NO) "YES" #FIXED>
<!ATTLIST CATEGORY        SEARCH (YES|NO) "YES" #FIXED>

```

**Future:** Need to add SEARCH attribute. The SEARCH attribute will allow Franklin to automatically generate the DAD mapping for the DB2 XML Extenders..

4. Include the external entity reference that defines the user interface widgets recognized by the Franklin Editor UI. Each element that needs to be editable in the Editor UI must be of type PCDATA and contain the DATATYPE attribute set to the appropriate UI type.

```

<!ENTITY % UITYPES        SYSTEM
"http://franklinserver/franklin/dtd/uitypes.txt">

<!ATTLIST TITLE           DATATYPE (%UITYPES;)      "STRING"      #FIXED>
<!ATTLIST SHORTDESCRIPTION DATATYPE (%UITYPES;)      "LONGTEXT"    #FIXED>
                        PARSE      (TRUE)           "TRUE"        #FIXED>

```

If you wish a LONGTEXT widget to allow an editor to enter a limited set of HTML tags, add the PARSE attribute and set it to true. The supported HTML are:

```

<p>, <ul>, <ol>, <sl>, <dl>, <dt>, <dd>, <li>, <div>

```

The file *uitypes.txt* is fixed and provided in the Franklin install in the *dtdDir* in the *franklin.properties* file. It contains the list of all UI widgets known to the Editor UI. (See section Editor UI Widgets for a detailed description of UITYPES)

```

DATE | INTEGER | STRING | SHORTTEXT | LONGTEXT | CHOICE | BROWSESERVER |
BROWSELOCAL | ASSOCLIST

```

5. An element can appear as a drop-down menu in the Editor UI and restrict the editor to choose the value from a predefined set. To accomplish this, set the DATATYPE attribute to the UI TYPE "CHOICE" and the CHOICES attribute to a default value from a list of options. The options can be defined as an external entity for reuse across many DTDs.

```
<!ENTITY % CATEGORYDEFS SYSTEM
"http://franklinserver/franklin/dtd/categorydefs.txt">
<!ATTLIST CATEGORY DATATYPE (%UITYPES;) "CHOICE" #FIXED
CHOICES (%CATEGORYDEFS;) "NONE" #REQUIRED>
```

For example, the options for CATEGORY could be defined as the types of Netfinity servers:

```
NONE | Netfinity_8500R | Netfinity_7000_M10 | Netfinity_5500_M10 |
Netfinity_5600 | Netfinity_5500
```

The Editor UI assumes that if the first word in the set of CHOICES is the string NONE, and the editor selects it, the element will not appear in the XML document.

6. A fragment can include other fragments as subfragments. If so, the entity reference that defines all subfragment types must be included in the DTD. The declaration of a subfragment must contain the SUBFRAGMENTTYPE attribute set to the appropriate type.

```
<!ENTITY % SUBFRAGMENTTYPES SYSTEM
"http://franklinserver/franklin/dtd/subfragmenttypes.txt">
<!ELEMENT SUBFRAGMENT (#PCDATA)>
<!ATTLIST SUBFRAGMENT SUBFRAGMENTTYPE (%SUBFRAGMENTTYPES;) "IMAGEFRAGMENT"
#FIXED>
```

**Future:** the subfragment syntax will be replaced by the XLink syntax once it becomes a W3 recommendation and XML4J and LotusXSL support the syntax. Until then, we will use subfragment elements as way to include content from another fragment.

**An example of a fragment DTD, listfragment.dtd:**

```
<!ENTITY % SUBFRAGMENTTYPES SYSTEM
"http://franklinserver/franklin/dtd/subfragmenttypes.txt">
<!ENTITY % CATEGORYDEFS SYSTEM
"http://franklinserver/franklin/dtd/categorydefs.txt">
<!ENTITY % UITYPES SYSTEM
"http://franklinserver/franklin/dtd/uitypes.txt">

<!ELEMENT LISTFRAGMENT (SYSTEM, TITLE, SHORTDESCRIPTION?, CATEGORY*,
LISTITEM+)>
<!ELEMENT SYSTEM (FRAGMENTID, CREATOR, MODIFIER, CREATIONTIME,
LASTMODIFIEDTIME, PAGETYPE, CONTENTSIZE?)>
<!ELEMENT FRAGMENTID (#PCDATA)>
<!ELEMENT CREATIONTIME (#PCDATA)>
<!ELEMENT LASTMODIFIEDTIME (#PCDATA)>
<!ELEMENT CONTENTSIZE (#PCDATA)>
<!ELEMENT CREATOR (#PCDATA)>
<!ELEMENT MODIFIER (#PCDATA)>
<!ELEMENT PAGETYPE (#PCDATA)>
<!ELEMENT TITLE (#PCDATA)>
<!ELEMENT SHORTDESCRIPTION (#PCDATA)>
```

```

<!ELEMENT CATEGORY          (#PCDATA)>
<!ELEMENT LISTITEM          (LISTTITLE?, DESCRIPTION?, LINK?, FOOTNOTE?)>
<!ELEMENT LISTTITLE         (#PCDATA)>
<!ELEMENT DESCRIPTION       (#PCDATA)>
<!ELEMENT LINK              (#PCDATA)>
<!ELEMENT FOOTNOTE          (#PCDATA)>

<!--
-->

<!ATTLIST TITLE              DATATYPE (#UITYPES;)    #FIXED      "STRING"
                           SEARCH  (YES|NO) "YES" #FIXED>

<!--
-->

<!ATTLIST SHORTDESCRIPTION  DATATYPE (#UITYPES;)    #FIXED      "SHORTTEXT"
                           SEARCH  (YES|NO) "YES" #FIXED>

<!--
-->

<!ATTLIST CATEGORY         DATATYPE (#UITYPES;)    #FIXED      "CHOICE"
                           CHOICES (%CATEGORYDEFS;) #IMPLIED
                           SEARCH  (YES|NO) "YES" #FIXED>

<!--
-->

<!ATTLIST LISTTITLE        DATATYPE (#UITYPES;)    #FIXED      "STRING">
<!ATTLIST DESCRIPTION      DATATYPE (#UITYPES;)    #FIXED      "STRING">
<!ATTLIST LINK             DATATYPE (#UITYPES;)    #FIXED      "STRING">
<!ATTLIST FOOTNOTE        DATATYPE (#UITYPES;)    #FIXED      "STRING">

```

### Franklin specification of compound fragment DTDs

A compound fragment contains a pointer to an accompanying file, such as a multimedia file, an XSL style sheet or a hand-crafted HTML file (i.e. ones that are not generated from XML by Franklin) The accompanying file is encoded as a binary object into the fragment for the duration of the communication between Editor UI and Franklin Server. Before check-in to the server, the Editor UI encodes the file as a binary object into the XML fragment. At the receiving end, the dispatcher extracts it and decodes into the original format. The reverse happens at check-out. This allows a single communication between the client and server when exchanging this type of fragments.

1. A compound fragment DTD must use the following syntax to declare the inclusion of an external file:

```

<!ELEMENT CONTENT          (#PCDATA)>
<!ELEMENT CONTENTDIR       (#PCDATA)>
<!ELEMENT CONTENTFILENAME  (#PCDATA)>
<!--
-->
<!ATTLIST CONTENT          DATATYPE (#UITYPES;)    #FIXED      "STRING">
<!--
-->
<!ATTLIST CONTENTDIR       DATATYPE (#UITYPES;)    #FIXED      "BROWSESERVER">
<!--
-->
<!ATTLIST CONTENTFILENAME  DATATYPE (#UITYPES;)    #FIXED      "BROWSELOCAL">

```

### Franklin specification of group index fragment DTDs

Future: To be filled in

### Franklin specification of servable DTDs

In the Franklin system, servables always result in one or more final published pages. The DTD must indicate the names of the XSL style sheets it can use for layout and where to publish the resulting pages.



1. A servable DTD must contain the following declarations:

```
<!ELEMENT PUBLISHINFO      (STYLESHEET, PUBLISHDIR, PUBLISHFILENAME)>
<!ELEMENT STYLESHEET      (#PCDATA)>
<!ELEMENT PUBLISHDIR      (#PCDATA)>
<!ELEMENT PUBLISHFILENAME  (#PCDATA)>
<!ATTLIST STYLESHEET       DATATYPE (%UITYPES;) #FIXED "CHOICE"
                CHOICES (stylesheet1.xsl|stylesheet2.xsl) #IMPLIED>
<!ATTLIST PUBLISHDIR      DATATYPE (%UITYPES;) #FIXED "BROWSESERVER">
<!ATTLIST PUBLISHFILENAME DATATYPE (%UITYPES;) #FIXED "STRING">
```

2. A servable can include one or more subfragments. Each subfragment serves a specific role within the servable and can be named in a meaningful way, for example MAINPHOTO, HIGHLIGHTS etc. Each subfragment must have an attribute that indicates the type of subfragment to include. The syntax to include a subfragment in a servable follows:

```
<!ELEMENT MAINPHOTO        (#PCDATA)>
<!ELEMENT HIGHLIGHTS       (#PCDATA)>
<!ATTLIST MAINPHOTO        DATATYPE (%UITYPES;) #FIXED "STRING"
                SUBFRAGMENTTYPE (%SUBFRAGMENTTYPES;) #FIXED "IMAGEFRAGMENT">
<!ATTLIST HIGHLIGHTS      DATATYPE (%UITYPES;) #FIXED "STRING"
                SUBFRAGMENTTYPE (%SUBFRAGMENTTYPES;) #FIXED "LISTFRAGMENT">
```

3. A servable can be included in an automatically generated group index fragment.

To be filled in

An example of a servable DTD, productpage.dtd:

```
<!ENTITY % UNIVERSAL      SYSTEM
"http://franklinserver/franklin/dtd/universal.dtd">
<!ENTITY % SUBFRAGMENTTYPES SYSTEM
"http://franklinserver/franklin/dtd/subfragmenttypes.txt">
<!ENTITY % CATEGORYDEFS   SYSTEM
"http://franklinserver/franklin/dtd/categorydefs.txt">
<!ELEMENT PRODUCTPAGE (SYSTEM, TITLE, SOURCE?, COMMENT?, SHORTDESCRIPTION?,
                LONGDESCRIPTION?, KEYWORD*, CATEGORY*, RELATEDLINK*,
                PUBLISHINFO+, BRANDNAVIGATION, MAINPHOTO, GLANCE,
                HIGHLIGHTS , GROUPINDEX*)>
<!ELEMENT SYSTEM        (FRAGMENTID, CREATOR, MODIFIER, CREATIONTIME,
                LASTMODIFIEDTIME, PAGETYPE, CONTENTSIZE?)>
<!ELEMENT FRAGMENTID    (#PCDATA)>
<!ELEMENT CREATIONTIME  (#PCDATA)>
<!ELEMENT LASTMODIFIEDTIME (#PCDATA)>
<!ELEMENT CONTENTSIZE   (#PCDATA)>
<!ELEMENT CREATOR       (#PCDATA)>
<!ELEMENT MODIFIER      (#PCDATA)>
<!ELEMENT PAGETYPE      (#PCDATA)>
<!ELEMENT TITLE         (#PCDATA)>
<!ELEMENT SOURCE        (#PCDATA)>
<!ELEMENT COMMENT       (#PCDATA)>
<!ELEMENT SHORTDESCRIPTION (#PCDATA)>
<!ELEMENT LONGDESCRIPTION (#PCDATA)>
<!ELEMENT KEYWORD       (#PCDATA)>
```

```

<!ELEMENT CATEGORY          (#PCDATA)>
<!ELEMENT RELATEDLINK       (URL, LINKTITLE)>
<!ELEMENT URL                (#PCDATA)>
<!ELEMENT LINKTITLE          (#PCDATA)>
<!ELEMENT DOCTYPE            (#PCDATA)>
<!ELEMENT DTDURL             (#PCDATA)>
<!ELEMENT PUBLISHINFO        (STYLESHEET, PUBLISHDIR, PUBLISHFILENAME)>
<!ELEMENT STYLESHEET         (#PCDATA)>
<!ELEMENT PUBLISHDIR         (#PCDATA)>
<!ELEMENT PUBLISHFILENAME    (#PCDATA)>
<!ELEMENT BRANDNAVIGATION    (#PCDATA)>
<!ELEMENT MAINPHOTO          (#PCDATA)>
<!ELEMENT GLANCE             (#PCDATA)>
<!ELEMENT HIGHLIGHTS         (#PCDATA)>
<!ELEMENT GROUPINDEX         (#PCDATA)>
<!ATTLIST TITLE              DATATYPE (%UITYPES;)      #FIXED    "STRING">
<!ATTLIST SOURCE             DATATYPE (%UITYPES;)      #FIXED    "STRING">
<!ATTLIST COMMENT            DATATYPE (%UITYPES;)      FIXED     "STRING">
<!ATTLIST SHORTDESCRIPTION    DATATYPE (%UITYPES;)      #FIXED    "SHORTTEXT">
<!ATTLIST LONGDESCRIPTION    DATATYPE (%UITYPES;)      #FIXED
"SHORTTEXT">
<!ATTLIST KEYWORD            DATATYPE (%UITYPES;)      #FIXED    "STRING">
<!ATTLIST CATEGORY          DATATYPE (%UITYPES;)      #FIXED    "CHOICE"
CHOICES (%CATEGORYDEFS;) #IMPLIED>
<!ATTLIST URL                DATATYPE (%UITYPES;)      #FIXED    "STRING">
<!ATTLIST LINKTITLE          DATATYPE (%UITYPES;)      #FIXED    "STRING">
<!ATTLIST BRANDNAVIGATION    DATATYPE (%UITYPES;)      #FIXED    "STRING"
SUBFRAGMENTTYPE (%SUBFRAGMENTTYPES;) #FIXED "LISTFRAGMENT"
<!ATTLIST MAINPHOTO          DATATYPE (%UITYPES;)      #FIXED    "STRING"
SUBFRAGMENTTYPE (%SUBFRAGMENTTYPES;) #FIXED "IMAGEFRAGMENT">
<!ATTLIST GLANCE             DATATYPE (%UITYPES;)      #FIXED    "STRING"
SUBFRAGMENTTYPE (%SUBFRAGMENTTYPES;) #FIXED "LISTFRAGMENT">
<!ATTLIST HIGHLIGHTS         DATATYPE (%UITYPES;)      #FIXED    "STRING"
SUBFRAGMENTTYPE (%SUBFRAGMENTTYPES;) #FIXED "LISTFRAGMENT">
<!ATTLIST STYLESHEET         DATATYPE (%UITYPES;)      #FIXED "CHOICE"
CHOICES (web_product_index.xsl | pda_product_index.xsl)
#IMPLIED>
<!ATTLIST PUBLISHDIR         DATATYPE (%UITYPES;)      #FIXED "BROWSESERVER">
<!ATTLIST PUBLISHFILENAME    DATATYPE (%UITYPES;)      #FIXED "STRING">
<!ATTLIST GROUPINDEX         DATATYPE (%UITYPES;)      #FIXED "STRING"
SUBFRAGMENTTYPE (%SUBFRAGMENTTYPES;) #FIXED "GROUPINDEX">

```

An example of a servable, 2-tsrv.xml, which abides to productpage.dtd:

```

<?xml version="1.0"?>
<!DOCTYPE PRODUCTPAGE SYSTEM "http://franklinserver/dtd/productpage.dtd">
<PRODUCTPAGE>
  <SYSTEM>
    <FRAGMENTID>2-tsrv.xml</FRAGMENTID>
    <CREATOR>Joe Moe</CREATOR>
    <MODIFIER>Jane Mane</MODIFIER>
    <CREATIONTIME>384738740383</CREATIONTIME>
    <LASTMODIFIEDTIME>384738740383</LASTMODIFIEDTIME>
    <PAGE TYPE>Servable</PAGE TYPE>
  </SYSTEM>
  <TITLE>Netfinity 8500R</TITLE>

```

```

<SOURCE>IBM PC Company</SOURCE>
<SHORTDESCRIPTION>Mainframe features bring extraordinary performance and
reliability to a rack-optimized 8-way server</SHORTDESCRIPTION>
<LONGDESCRIPTION>A great value in 8-way servers, the new Netfinity 8500R
maximizes uptime and provides superior manageability for compute-intensive
business intelligence, transaction processing and server consolidation
projects. </LONGDESCRIPTION>
<KEYWORD>New</KEYWORD>
<KEYWORD>Server</KEYWORD>
<KEYWORD>Pentium</KEYWORD>
<CATEGORY>Netfinity 8500R</CATEGORY>
<CATEGORY>Small and Medium Business</CATEGORY>
<RELATEDLINK>
  <URL>ftp://ftp.pc.ibm.com/pub/pccbbs/pc_servers/8500rf.pdf</URL>
  <LINKTITLE>White paper</LINKTITLE>
</RELATEDLINK>
<PUBLISHINFO>
  <PUBLISHDIR>/web/netfinity/</PUBLISHDIR>
  <PUBLISHFILENAME>index.html</PUBLISHFILENAME>
  <STYLESHEET>web_product_index.xsl</STYLESHEET>
</PUBLISHINFO>
<PUBLISHINFO>
  <PUBLISHDIR>/pda/netfinity/</PUBLISHDIR>
  <PUBLISHFILENAME>index.html</PUBLISHFILENAME>
  <STYLESHEET>pda_product_index.xsl</STYLESHEET>
</PUBLISHINFO>
<GROUPINDEX>444-ifrg.xml</GROUPINDEX>
<MAINPHOTO SUBFRAGMENTTYPE="IMAGEFRAGMENT">
  222-bfgr.xml</MAINPHOTO>
<HIGHLIGHTS SUBFRAGMENTTYPE="LISTFRAGMENT">
  444-tfgr.xml</HIGHLIGHTS>
</PRODUCTPAGE>

```

Once all DTDs for the collection have been defined, save them in the directory defined by the variable *dtdDir* in the *franklin.properties* file.

After updating, adding or deleting any DTDs, update the files *configDir/dtds.xml* and *dtdDir/subfragmenttypes.txt* to reflect the current DTDs. Also remember to define a DAD file to for each DTD. (Future: DAD explanation should be expanded)

## Step 7: Define Style Sheets

For each servable DTD, you need to define one or more XSL style sheets that will be assembled with the servable XML and the XML of any subfragments into the final published pages. A style sheet is written using the XSL syntax to produce HTML, DHTML, HDML or other desired output. [See the XSL Transformations syntax at <http://www.w3.org/TR/xslt/>]

Comment [LW3]: mention LouisXSL and have url to alphaworks site

### Franklin specification of XSL style sheets

Because the servable includes content from subfragments, the style sheet must be written to work on the so-called *expanded* servable. Before page assembly, a servable is temporarily rewritten to include the content of all its subfragments. Because the XLink standard has not been finalized,

XSL style sheets cannot access content stored in subfragment files outside the servable. Franklin implements a temporary solution that mimics the XLink functionality by expanding the servable. This is demonstrated by the expanded product page 2-tsrv.xml:

```
<?xml version="1.0"?>
<!DOCTYPE PRODUCTPAGE SYSTEM
"http://yourfranklinserver/dtd/productpage.dtd">
<PRODUCTPAGE>
  <SYSTEM>
    <FRAGMENTID>2-tsrv.xml</FRAGMENTID>
    <CREATOR>Joe Moe</CREATOR>
    <MODIFIER>Jane Mane</MODIFIER>
    <CREATIONTIME>384738740383</CREATIONTIME>
    <LASTMODIFIEDTIME>384738740383</LASTMODIFIEDTIME>
    <PAGETYPE>Servable</PAGETYPE>
  </SYSTEM>
  <TITLE>Netfinity 8500R</TITLE>
  <SOURCE>IBM PC Company</SOURCE>
  <SHORTDESCRIPTION>Mainframe features bring extraordinary performance and
reliability to a rack-optimized 8-way server</SHORTDESCRIPTION>
  <LONGDESCRIPTION>A great value in 8-way servers, the new Netfinity 8500R
maximizes uptime and provides superior manageability for compute-intensive
business intelligence, transaction processing and server consolidation
projects. </LONGDESCRIPTION>
  <KEYWORD>New</KEYWORD>
  <KEYWORD>Server</KEYWORD>
  <KEYWORD>Pentium</KEYWORD>
  <CATEGORY>Netfinity 8500R</CATEGORY>
  <CATEGORY>Small and Medium Business</CATEGORY>
  <RELATEDLINK>
    <URL>ftp://ftp.pc.ibm.com/pub/pccbbs/pc_servers/8500rf.pdf</URL>
    <LINKTITLE>White paper</LINKTITLE>
  </RELATEDLINK>
  <PUBLISHINFO>
    <PUBLISHDIR>/web/netfinity</PUBLISHDIR>
    <PUBLISHFILENAME>index.html</PUBLISHFILENAME>
    <STYLESHEET>web_product_index.xsl</STYLESHEET>
  </PUBLISHINFO>
  <PUBLISHINFO>
    <PUBLISHDIR>/pda/netfinity</PUBLISHDIR>
    <PUBLISHFILENAME>index.html</PUBLISHFILENAME>
    <STYLESHEET>pda_product_index.xsl</STYLESHEET>
  </PUBLISHINFO>
  <GROUPINDEX>444-ifrg.xml</GROUPINDEX>
  <MAINPHOTO SUBFRAGMENTTYPE="IMAGEFRAGMENT">
    <IMAGEFRAGMENT>
      <SYSTEM>
        <FRAGMENTID>222-bfrg.xml</FRAGMENTID>
        <CREATOR>BOB</CREATOR>
        <MODIFIER>BOB</MODIFIER>
        <CREATIONTIME>384738740383</CREATIONTIME>
        <LASTMODIFIEDTIME>384738740383</LASTMODIFIEDTIME>
        <PAGETYPE>Fragment</PAGETYPE>
        <CONTENTSIZE>400</CONTENTSIZE>
      </SYSTEM>
      <TITLE>The Netfinity 8500R large jpeg</TITLE>
      <SHORTDESCRIPTION>Netfinity 8500R</SHORTDESCRIPTION>
```

```

        <CONTENTDIR>/images/prod_images/</CONTENTDIR>
        <CONTENTFILENAME>8500R_large.jpg</CONTENTFILENAME>
        <CONTENT/>
    </IMAGEFRAGMENT>
</MAINPHOTO>
<HIGHLIGHTS SUBFRAGMENTTYPE="LISTFRAGMENT">
    <LISTFRAGMENT>
        <SYSTEM>
            <FRAGMENTID>444-tfrg.xml</FRAGMENTID>
            <CREATOR>BOB</CREATOR>
            <MODIFIER>BOB</MODIFIER>
            <CREATIONTIME>384738740383</CREATIONTIME>
            <PAGETYPE>Fragment</PAGETYPE>
            <LASTMODIFIEDTIME>384738740383</LASTMODIFIEDTIME>
        </SYSTEM>
        <TITLE>Highlights of the 8500R</TITLE>
        <CATEGORY>Netfinity 8500R</CATEGORY>
        <LISTITEM>
            <TITLE>Light-Path Diagnostics</TITLE>
            <BODY>Lighted guidance system to assist in quick
identification of failing components, similar to the lights in a copier
that identify the location of a paper jam.</BODY>
        </LISTITEM>
        <LISTITEM>
            <TITLE>Active PCI technology</TITLE>
            <BODY>Enables IBM's unique hot-add PCI, letting you
add client systems, balance network traffic or increase storage capacity
without shutting the system down. </BODY>
        </LISTITEM>
    </LISTFRAGMENT>
</HIGHLIGHTS>
</PRODUCTPAGE>

```

Any Xpath expressions in the style sheet that refer to subfragment content will be local to the servable. The following example XSL style sheet, `web_product_index.xsl`, produces a simple HTML page by displaying content from the servable as well as the two subfragments:

```

<?xml version="1.0"?>
<xsl:stylesheet xmlns:xsl="http://www.w3.org/XSL/Transform/1.0">

<xsl:template match="PRODUCTPAGE">
<HTML>
<HEAD>
<TITLE><xsl:value-of select="TITLE"/></TITLE>
<META NAME="source-xml" CONTENT="{SYSTEM/FRAGMENTID}"/>
<META NAME="source-xsl" CONTENT="web_product_index.xsl"/>
</HEAD>
<BODY>
<TABLE CELLPADDING="0" CELLSPACING="0" BORDER="0" WIDTH="451">
<TR>
<TD>
<!-- title section -->
        <FONT COLOR="#003399" SIZE="+3" FACE="Times New Roman">
<xsl:value-of select="TITLE"/>
        </FONT><BR/><BR/>

```

```

<!-- end title section -->
<!-- short description section -->
  <B><FONT SIZE="-1" FACE="Arial">
    <xsl:value-of select="SHORTDESCRIPTION"/>
  </FONT><BR/><BR/></B>
<!-- end short description section -->
</TD>
</TR>
<TR>
<TD>
<!-- photo section -->
  <IMG HEIGHT="110" WIDTH="140"
SRC="/multimedia{MAINPHOTO/IMAGEFRAGMENT/CONTENTDIR}{MAINPHOTO/IMAGEFRAGMEN
T/CONTENTFILENAME}" BORDER="0"
ALT="MAINPHOTO/IMAGEFRAGMENT/SHORTDESCRIPTION"></IMG>
<!-- end of photo section -->
</TD>
</TR>
</TABLE>
<!-- Highlights section -->
<TABLE BORDER="0" CELSPACING="0" CELLPADDING="5" WIDTH="451">
<TR>
<TD COLSPAN="2" WIDTH="451">
  <B><FONT SIZE="-1" FACE="Arial">Highlights of the
  <xsl:value-of select="TITLE"/>
  </FONT></B>
</TD>
</TR>
<xsl:apply-templates select="HIGHLIGHTS/LISTFRAGMENT/LIST"/>
</TABLE>
<!-- End of Highlights section -->
</BODY>
</HTML>
</xsl:template>

<xsl:template match="/PRODUCTPAGE/HIGHLIGHTS/LISTFRAGMENT">
<xsl:for-each select="LISTITEM">
  <TR>
    <TD WIDTH="151" VALIGN="TOP">
      <FONT size="-1" face="Arial"><xsl:value-of select="TITLE"/></FONT>
    </TD>
    <TD WIDTH="300" VALIGN="TOP">
      <FONT size="-1" face="Arial"><xsl:value-of select="BODY"/></FONT>
    </TD>
  </TR>
</xsl:for-each>
</xsl:template>
</xsl:stylesheet>

```

Once all XSL style sheets for the DTDs have been defined, add them to the CHOICES list of the STYLESHEET element in the appropriate DTDs.

Then, check them in to the /xsl/ directory using the Franklin Editor.

[Add here, the definition of a debug style sheet, what it should do, and where it should be saved on the server]

## Step 8: Create Directory Structure

Create the directory structure that corresponds to the site map of your application. Under *publishDir* create the HTML directories, and under *multimediaDir* the multimedia directories.

If your site is published to more than one audience segment or device, define several *sibling* directory structures under *publishDir*. For example, a site published for two devices, one for browsing all content using a web browser, and another for browsing only the news section using a pda browser, could have the following directory structure:

```
publishDir/web/  
publishDir/web/news/  
publishDir/web/products/  
publishDir/pda/  
publishDir/pda/news/  
multimediaDir/images/  
multimediaDir/audio/
```

When an editor authors a servable, the PUBLISHDIR element of the servable will be presented in the UI with the BROWSESERVER widget. This widget allows the editor to browse the directory structure under *assetsDir* and select where to save the resulting file. Similarly, when editing a multimedia object, the widget allows the editor to browse the directory structure to select where to save the binary file.

## Step 9: Configure Web Server

To browse the published sites, set up a web server for each sibling site. Configure the *DocumentRoot* variable to point to the top of the directory hierarchy of a sibling site. The example below assumes that the *baseDir* in *franklinServletInitialization.properties* is set to *"/franklin/data/"*:

For the example in the previous section, you would set up two web servers:

```
Web Server 1: DocumentRoot "/franklin/data/publish/web/"  
Web Server 2: DocumentRoot "/franklin/data/publish/pda/"
```

Also, add the aliases below to the configuration file of Web Server 1 and 2.

```
Alias /dtd/           "/franklin/data/dtd/"  
Alias /xsl/           "/franklin/data/assets/xsl/"  
Alias /multimedia/    "/franklin/data/assets/multimedia/"  
Alias /xml/           "/franklin/data/xml"
```

Set directory browsing "on" so that you can easily browse the DTDs and verify the uploaded XML files, XSL style sheets, and multimedia files.

## Step 10: Define Roles & Users

Before running the Editor UI, you need to define the allowed roles and users of the Franklin system. A role is defined by the list of DTDs the role is allowed to edit. A user is defined by one or more roles.

To define new roles, edit the file *configDir/roles.xml* by importing the DTD *configDir/roles.dtd* to an XML editor such as Xena from IBM alphaworks. (Future: use the Editor UI to edit the file)

The DTD *roles.dtd*:

```
<!ELEMENT ROLES (ROLE*)>
<!ELEMENT ROLE (ROLENAME, DTD*)>
<!ELEMENT ROLENAME (#PCDATA)>
<!ELEMENT DTD (#PCDATA)>
```

An example *roles.xml* defines two roles, FragmentEditor and Editor and associates the allowed DTDs to each:

```
<?xml version="1.0" encoding="UTF-8"?>
<ROLES>
  <ROLE>
    <ROLENAME>FragmentEditor</ROLENAME>
    <DTD>http://franklinserver/dtd/textfragment.dtd</DTD>
    <DTD>http://franklinserver/dtd/listfragment.dtd</DTD>
    <DTD>http://franklinserver/dtd/audiofragment.dtd</DTD>
    <DTD>http://franklinserver/dtd/videofragment.dtd</DTD>
    <DTD>http://franklinserver/dtd/imagefragment.dtd</DTD>
  </ROLE>
  <ROLE>
    <ROLENAME>Editor</ROLENAME>
    <DTD>http://franklinserver/dtd/textfragment.dtd</DTD>
    <DTD>http://franklinserver/dtd/newsarticle.dtd</DTD>
    <DTD>http://franklinserver/dtd/productpage.dtd</DTD>
  </ROLE>
</ROLES>
```

To define new users, edit the file *configDir/users.xml* by importing the DTD *configDir/users.dtd* to an XML editor.

The DTD *users.dtd*:

```
<!ELEMENT USERS (USER*)>
<!ELEMENT USER (NAME, EMAIL, PASSWORD, ROLE+)>
<!ELEMENT NAME (#PCDATA)>
<!ELEMENT EMAIL (#PCDATA)>
<!ELEMENT PASSWORD (#PCDATA)>
<!ELEMENT ROLE (#PCDATA)>
```

An example *users.xml* defines two users, each with one or more roles.

```
<?xml version="1.0" encoding="UTF-8"?>
<USERS>
```



```

<USER>
  <NAME>Joe Moe</NAME>
  <EMAIL>joe@us.ibm.com</EMAIL>
  <PASSWORD>joe</PASSWORD>
  <ROLE>FragmentEditor</ROLE>
  <ROLE>Editor</ROLE>

</USER>
<USER>
  <NAME>Jane Mane</NAME>
  <EMAIL>jane@us.ibm.com</EMAIL>
  <PASSWORD>jane</PASSWORD>
  <ROLE>Editor</ROLE>
</USER>
<USER>
</USER>
</USERS>

```

When the Franklin server is initialized, the Dispatcher module runs *Globals.loadinfo()*. This method merges *users.xml*, *roles.xml* and *dtids.xml* into one DOM in memory for fast access. The method verifies that all roles named in *users.xml* have a definition in *roles.xml*. It also verifies that all DTDs named in *roles.xml* are defined in *dtids.xml* and exist in the named directory. If any discrepancies are detected, the server prints out a warning message. (Future: the verification still needs to be implemented.)

(Future: if any of the configuration files have changed after the server was last initialized, the files will get reloaded and the DOM will get refreshed. This will not have an effect on any users currently logged on.)

## Editor Interface & Dispatcher Communication

After installing the Editor User Interface application and completing the customization described in Section Install Franklin Client, launch the application from the Franklin Editor icon on the desktop.

All communications between the Editor UI and the Franklin Dispatcher follow the WebDAV protocol. [See the full specification at <http://www.webdav.org/specs/>]

The HTTP header of a Client request always contains the following attributes with *ACTION* replaced by PUT, GET, LOCK or UNLOCK, *franklinservername* replaced by the name of the Franklin server the client is communicating with, and *length* replaced by the length in bytes of the body section.

```

ACTION /filename HTTP/1.1
Host: franklinservername
Content-type: text/xml; charset="utf-8"
Content-Length: length

```

The body of the Client request contains the XML document to be checked into the server or a DASL search query.

The HTTP header of the Dispatcher response always contains the following attributes with *errorcode* and *message* replaced by the standard codes listed in Appendix 1.

```

HTTP/1.1 errorcode message
Content-Type: text/xml; charset="utf-8"
Content-Length: length

```

The format of the body of the Dispatcher response depends on the request and whether the request was successfully completed or not.

A special format used for the response follows the DTD below. In the further examples, the use of the elements will become obvious.

```

<!ELEMENT RESPONSE (PROCESS, STATUS, ERRORCODE, MESSAGE, SYSTEM?, LOCK?)>
<!ELEMENT PROCESS      (#PCDATA)>
<!ELEMENT STATUS      (#PCDATA)>
<!ELEMENT ERRORCODE   (#PCDATA)>
<!ELEMENT MESSAGE     (#PCDATA)>
<!ELEMENT SYSTEM      (FRAGMENTID, CREATOR, MODIFIER, CREATIONTIME,
LASTMODIFIEDTIME, PAGETYPE, CONTENTSIZE?)>
<!ELEMENT FRAGMENTID  (#PCDATA)>
<!ELEMENT CREATOR     (#PCDATA)>
<!ELEMENT MODIFIER    (#PCDATA)>
<!ELEMENT CREATIONTIME (#PCDATA)>
<!ELEMENT LASTMODIFIEDTIME (#PCDATA)>
<!ELEMENT PAGETYPE    (#PCDATA)>
<!ELEMENT CONTENTSIZE  (#PCDATA)>
<!ELEMENT LOCK        (LOCKEDBY, LOCKTIME, LOCKTOKEN?)>
<!ELEMENT LOCKEDBY    (#PCDATA)>
<!ELEMENT LOCKTIME    (#PCDATA)>
<!ELEMENT LOCKTOKEN   (#PCDATA)>

```

## Login

The editor logs in using the user name and password defined by the Franklin administrator, as defined in Section Define Roles & Users.

Client request:

```

GET /xml/franklin_init.xml HTTP/1.1
Host: franklinserver/franklinservlet
Content-Type: text/xml; charset="utf-8"

```

```

Authorization: "Basic " + encode Base64(username + ":" + password)

```

If the user name is not defined or if the password is entered incorrectly, the dispatcher responds with the appropriate error. Dispatcher response:

```

HTTP/1.1 401 SC_UNAUTHORIZED
Content-Type: text/xml; charset="utf-8"
Content-Length: length

<?xml version="1.0"?>
<RESPONSE>
  <PROCESS>login</PROCESS>
  <STATUS>401</STATUS>

```

**Comment [LW4]:** I don't think this is the right error code returned here. But couldn't tell cuz its not working.

```

<ERRORCODE>U101</ERRORCODE>
<MESSAGE>User Joe Doe not defined</MESSAGE>
</RESPONSE>

```

If login succeeds, as described in Section Dispatcher: Session Management, the Dispatcher adds the user to the *currentusers* hash table and generates a unique session identifier, *sessionId*. All subsequent requests from the Editor UI must contain *sessionId* in the HTTP header.

The dispatcher responds to a successful login request by generating the *franklin\_init.xml* document that corresponds to the user's roles, references the DTDs the user is allowed to edit, and specifies the attributes, operators and allowed values for the Search UI. Dispatcher response:

```

HTTP/1.1 200 OK
Content-Type: text/xml; charset="utf-8"
Content-Length: length
Sessionid: 175a:dc8e0de306:-8000

<?xml version="1.0" encoding="UTF-8"?>
<FRANKLIN_INIT>
  <SEARCH>
    <ATTRIBUTEList>
      <ATTRIBUTE displayname="Creation Date" name="CREATIONTIME"
class="Time"/>
      <ATTRIBUTE displayname="Last Modified Date"
name="LASTMODIFIEDTIME" class="Time"/>
      <ATTRIBUTE displayname="Creator" name="CREATOR" class="Name"/>
      <ATTRIBUTE displayname="Document Type" name="DOCTYPE"
class="Selection" options="TEXTFRAGMENT | LISTFRAGMENT | IMAGEFRAGMENT |
AUDIOFRAGMENT | VIDEOFRAGMENT | INDEXGROUP | PRODUCTPAGE | SOMESERVABLE"/>
      <ATTRIBUTE displayname="Page Type" name="PAGETYPE"
class="Selection" options="Fragment|Servable"/>
      <ATTRIBUTE displayname="Keyword" name="KEYWORD" class="Text"/>
      <ATTRIBUTE displayname="Category" name="CATEGORY"
lass="Selection" options=" Netfinity_8500R | Netfinity_7000_M10 |
Netfinity_5500_M10 | Netfinity_5600 | Netfinity_5500"/>
    </ATTRIBUTEList>
    <CLASSList>
      <CLASS name="Time">
        <OPERATOR name=">="/>
        <OPERATOR name="&#60;="/>
        <OPERATOR name="="/>
        <VALUE datatype="date"/>
      </CLASS>
      <CLASS name="Integer">
        <OPERATOR name=">="/>
        <OPERATOR name="&#60;="/>
        <OPERATOR name="="/>
        <VALUE datatype="integer"/>
      </CLASS>
      <CLASS name="Name">
        <OPERATOR name="is"/>
        <OPERATOR name="isn't"/>
        <OPERATOR name="starts with"/>
        <VALUE datatype="string"/>
      </CLASS>

```

```

    <CLASS name="Text">
        <OPERATOR name="is"/>
        <OPERATOR name="starts with"/>
        <VALUE datatype="string"/>
    </CLASS>
    <CLASS name="Selection">
        <OPERATOR name="is"/>
        <OPERATOR name="isn't"/>
        <VALUE datatype="choice"/>
    </CLASS>
</CLASSLIST>
<RESULTS>
<ATTRIBUTE displayname="Last Modified Date" name="LASTMODIFIEDTIME"
class="Time"/>
<ATTRIBUTE displayname="Creator" name="CREATOR" class="Name"/>
<ATTRIBUTE displayname="Title" name="TITLE" class="Text"/>
<ATTRIBUTE displayname="Document Type" name="DOCTYPE"
lass="Selection"/>
</RESULTS>
</SEARCH>
<ROLE name="FragmentEditor" displayname="Fragment Editor">
    <FRAGMENTS displayname="Fragment">
        <DTD displayname="Text"
href="http://franklinserver/franklin/dtd/textfragment.dtd"/>
        <DTD displayname="List"
href="http://franklinserver/franklin/dtd/listfragment.dtd"/>
        <DTD displayname="Audio"
href="http://franklinserver/franklin/dtd/audiofragment.dtd"/>
        <DTD displayname="Video"
href="http://franklinserver/franklin/dtd/videofragment.dtd"/>
        <DTD displayname="Image"
href="http://franklinserver/franklin/dtd/imagefragment.dtd"/>
    </FRAGMENTS>
    </ROLE>
    <ROLE name="Editor" displayname="Editor">
        <FRAGMENTS displayname="Fragment">
            <DTD displayname="Text"
href="http://franklinserver/franklin/dtd/textfragment.dtd"/>
        </FRAGMENTS>
        <SERVABLES displayname="Page">
            <DTD displayname="News Article"
href="http://franklinserver/franklin/dtd/newsarticle.dtd"/>
            <DTD displayname="Product Page"
href="http://franklinserver/franklin/dtd/productpage.dtd"/>
        </SERVABLES>
    </ROLE>
</FRANKLIN_INIT>

```

From this *franklin\_init.xml* document, the Editor UI builds the *File > New Fragment* and *File > New Page* menus. It also maintains the mappings between display names and DTD URLs in a hash table.

The Editor UI can be set to load all DTDs at this point, if it is important to enable off-line editing. We have chosen to load a DTD from the server upon demand for a faster startup process.

At this point, the editor is able to either create new content or search for existing content in the system.

### Create new content

The *File > New Fragment* menu lists all fragments and the *File > New Page* menu lists all servable pages the editor is allowed to create or edit. If the editor selects to create a new fragment, e.g. a TEXTFRAGMENT, the Editor UI gets the DTD from the appropriate URL and automatically generates a template from the DTD, as shown below:

[Include screenshot here]

In parallel, the Editor UI maintains in memory a DOM corresponding to the DTD.

### Editor UI Widgets

The Editor UI uses the DATATYPE attributes in the DTD to generate the appropriate Java widget in the user interface. If an element does not contain a DATATYPE attribute no input is allowed for that element. Children elements may still contain DATATYPE attributes to specify their user interface. The mapping between Franklin UITYPEs and Java widgets are given below:

|              |   |
|--------------|---|
| date         | => JTextField   |
| integer      | => JTextField   |
| string       | => JTextField   |
| shorttext    | => JTextArea (scrolling)  |
| longtext     | => JTextArea (scrolling)  |
| choice       | => JComboBox(with DefaultComboBoxModel to hold the data)        |
| browselocal  | => JTextField(with JFileChooser to select local file)           |
| browseserver | => JTextField(with custom JFrame to browse server<br>directory) |

Each Java widget is encapsulated in a set of classes that include additional functionality. For example, if an element in the DTD is required, e.g. TITLE, the widget will be highlighted (e.g. colored brightly) to help the editor distinguish which fields must be filled in. If an element can appear more than once, e.g. KEYWORD, +/- buttons appear next to the widget that allow duplicating the widget or group of widgets.

BODY tags are handled specially within the system. The system assumes that BODY tags are composed of 1 or more PARAGRAPH tags. Typically, this is represented by a longtext widget in the user interface. Blank lines in the input are interpreted as paragraph separators. When constructing the DOM object, these paragraphs are composed within the outer BODY tag.

### Check-in of New Fragment

When the editor has filled in the template in the UI, clicking on the check-in icon verifies that all required elements are filled in. If so, the DOM in memory is populated with the data in the UI widgets. New nodes are added if new instances of an element have been created using the +/- buttons. Nodes are removed from the DOM if optional fields have not been filled in. Once the DOM mirrors exactly the UI, the document is transformed to an XML string and a request is sent to the Dispatcher with the XML as the body.

Note that the only time a check-in request to the Franklin Dispatcher does not include the file name containing *fragmentid* is when uploading a new fragment. The absence of a *fragmentid* indicates to the server that a new, unnamed fragment is being checked-in. The Dispatcher assigns unique ids to all fragments.

Deleted:

#### Client request:

```
PUT fragmentid HTTP/1.1
Host: franklinserver/franklinservlet
Content-Type: text/xml; charset="utf-8"
SessionId: 175a:dc8e0de306:-8000
Content-Length: length

<?xml version="1.0"?>
<!DOCTYPE TEXTFRAGMENT SYSTEM
"http://adtech.ibmus2.ibm.com/franklin/dtd/textfragment.dtd" >
<TEXTFRAGMENT>
  <SYSTEM>
    <FRAGMENTID/>
    <CREATOR/>
    <MODIFIER/>
    <CREATIONTIME/>
    <LASTMODIFIEDTIME/>
    <PAGETYPE/>
    <CONTENTSIZE/>
  </SYSTEM>
  <TITLE>This is the title of this textfragment</TITLE>
  <BODY>
    <PARAGRAPH>This is the document body</PARAGRAPH>
  </BODY>
</TEXTFRAGMENT>
```

If check-in is successful the Dispatcher returns the SYSTEM data of the XML document filled in with the newly created unique *fragmentid*, and the authoring information, as described in Section XXX. The client merges the SYSTEM tag into the existing XML document. The Editor UI now has the complete XML.

#### Dispatcher response:

```
HTTP/1.1 200 OK
Content-Type: text/xml; charset="utf-8"
Content-Length: length
SessionId: 175a:dc8e0de306:-8000

<?xml version="1.0"?><RESPONSE>
  <PROCESS>new Checkin</PROCESS>
  <STATUS>200</STATUS>
  <ERRORCODE>OK</ERRORCODE>
  <MESSAGE>OK</MESSAGE>
  <SYSTEM>
    <FRAGMENTID>46ba850dc8cf1f3c1007f33-Tfrg.xml</FRAGMENTID>
    <CREATOR>Joe Doe</CREATOR>
    <MODIFIER>Joe Doe</MODIFIER>
    <CREATIONTIME>2000-01-07-14.08.09.328000</CREATIONTIME>
```

```

<LASTMODIFIEDTIME>2000-01-07-14.08.09.328000</LASTMODIFIEDTIME>
<PAGETYPE>Fragment</PAGETYPE>
<CONTENTSIZE>537</CONTENTSIZE>
</SYSTEM>
</RESPONSE>

```

If the fragment about to be checked in has an accompanying content file, i.e. a multimedia asset or an XSL style sheet, the Editor UI encodes the contents using Base64encoding into the CONTENT element in the XML. On the server side, the Dispatcher un-encodes it and writes the file to the file system, as described in Section XXX. This method avoids sending multiple requests to the Dispatcher and having to maintain state between two requests.

Caveat: presently we are unclear on whether there is a size limitation to this method! And it is slow!

## Check-In of Modified Fragment

If the Editor UI checks in a modified fragment or page, it will have received a LOCKTOKEN from the Dispatcher before checking it out. The check-in request in this case must include the LockToken header field

Deleted:

### Client Request

```

PUT fragmentid HTTP1.1
Host: franklinserver/franklinservlet
Content-Type: text/xml; charset="utf-8"
SessionId: 175a:dc8e0de306:-8000
Content-Length: length
LockToken:

```

The dispatcher verifies that the correct lock token is supplied with the PUT request before it processes the request. The dispatcher changes the MODIFIER and the LASTMODIFIEDTIME fields in the SYSTEM element.

After the check-in command, the Editor UI issues an UNLOCK command using the appropriate LOCKTOKEN.

### Client request:

```

UNLOCK /12345678-tfrg.xml HTTP1.1
Host: franklinserver/franklinservlet
Sessionid = 175a:dc8e0de306:-8000
Locktoken = 12345678

```

The Dispatcher verifies the LOCKTOKEN as described in Section XXX, and returns an OK if the token is correct, otherwise it sends one of the two Franklin lock errors:

# L101 = Lock tokens do not match

# L102 = Missing lock token

## Check-out

To check out a fragment for editing from the Franklin Server, the Editor UI first requests a lock for the given fragment, as defined by the WebDAV protocol.

### Client request:

```
LOCK /12345678-tfrg.xml HTTP1.1
Host: franklinserver/franklinervlet
Sessionid = 175a:dc8e0de306:-8000
```

If the fragment is already locked by another user, the dispatcher returns a response with information on who has locked it when, in case the user wants to contact the person who holds the lock.

### Dispatcher response:

```
HTTP/1.1 200 OK
Content-Type: text/xml; charset="utf-8"
Content-Length: length
SessionId: 175a:dc8e0de306:-8000

<?xml version="1.0"?>
<RESPONSE>
  <PROCESS>Lock</PROCESS>
  <STATUS>200</STATUS>
  <ERRORCODE>OK</ERRORCODE>
  <MESSAGE>Locked</MESSAGE>
  <LOCK>
    <LOCKEDBY>Jane Mane</LOCKEDBY>
    <LOCKTIME>2000-01-07-13.08.10.328000</LOCKTIME>
  </LOCK>
</RESPONSE>
```

Comment [DMS]: Should not be 200  
(I'll have to check)

If the fragment is not already locked and if the user with the *sessionId* is allowed to edit documents based on the DTD of the requested fragment, the dispatcher creates a unique lock on the fragment as described in section Dispatcher: Lock Management. It also sends the lock token back in the response.

### Dispatcher response:

```
HTTP/1.1 200 OK
Content-Type: text/xml; charset="utf-8"
Content-Length: length
SessionId: 175a:dc8e0de306:-8000

<?xml version="1.0"?>
<RESPONSE>
  <PROCESS>Lock</PROCESS>
  <STATUS>200</STATUS>
  <ERRORCODE>OK</ERRORCODE>
  <MESSAGE>OK</MESSAGE>
  <LOCK>
    <LOCKEDBY>Joe Moe</LOCKEDBY>
    <LOCKTIME>2000-01-07-14.08.09.328000</LOCKTIME>
    <LOCKTOKEN>12345678</LOCKTOKEN>
  </LOCK>
</RESPONSE>
```



```
</LOCK>
</RESPONSE>
```

Now the Editor UI can request the fragment for editing using the lock received from the server.

Client request:

```
GET /12345678-tfrg.xml HTTP1.1
Host: franklinserver/franklinervlet
Content-Type: text/xml; charset="utf-8"
Locktoken = 12345678
Sessionid = 175a:dc8e0de306:-8000
```

The Dispatcher compares the lock to the one saved in the Meta Data Store. If they match, Dispatcher responds by sending back the complete XML of the fragment.

Dispatcher response:

```
HTTP/1.1 200 OK
Content-Type: text/xml; charset="utf-8"
Content-Length: length
Sessionid: 175a:dc8e0de306:-8000

<?xml version="1.0"?>
<!DOCTYPE PRODUCTPAGE SYSTEM "http://franklinserver/dtd/productpage.dtd">
<PRODUCTPAGE>
  <SYSTEM>
    ...
  </SYSTEM>
  ...
</PRODUCTPAGE>
```

The Editor UI retrieves the DTD of the checked-out fragment from the server if it has not yet loaded it. Using the DTD it auto-generates the UI widgets and then fills in the existing values from the checked-out fragment, adding new instances of elements using the +/- mechanism when necessary.

The editor can modify the fields in the same way as when creating new content. Upon check-in the Dispatcher updates the `LASTMODIFIEDTIME` and `MODIFIER` fields in the `SYSTEM` data of the checked-in XML document.

## Search

Clicking on the Search icon in the Editor UI brings up the Search dialogue shown below:

[insert Search screen shot here]

When launched, the Search dialogue parses *franklin\_init.xml* and stores attributes, operators and allowed values into hash tables. It dynamically generates the widgets for the query composition. When new attributes or values are added to *franklin\_init.xml*, the Search code does not need to be updated.

The Search UI communicates with the Dispatcher using the Distributed Authoring Search Language (DASL) [add ref], an extension to the WebDAV protocol. Franklin Server defines the

“Franklin” name space which allows the insertion of properties that correspond to the names of the indexed elements in Franklin Meta Data Store.

An example of a DASL exchange between Search UI and Dispatcher is shown below for the example Boolean query:

```
(AND
  (PAGETYPE "is" "Fragment")
  (LASTMODIFIEDTIME "gte" "1999/10/10")
  (CREATOR "is not" "Jeff Milton"))
```

Search request:

```
SEARCH / HTTP1.1
Host: franklinserver/franklinervlet
Content-Type: text/xml; charset="utf-8"
Sessionid = 175a:dc8e0de306:-8000

<?xml version="1.0"?>
<d:searchrequest xmlns:d="DAV:" xmlns:f="Franklin:">
  <d:basicsearch>
    <d:select>
      <d:prop>
        <f:FRAGMENTID/>
        <f:DTD/>
        <f:LASTMODIFIEDTIME/>
        <f:TITLE/>
        <f:CREATOR/>
      </d:prop>
    </d:select>
    <d:from>
      <d:scope>
        <d:href/>
        <d:depth>infinity</d:depth>
      </d:scope>
    </d:from>
    <d:where>
      <d:and>
        <d:eq>
          <d:prop> <f:PAGETYPE/> </D:prop>
          <d:literal>Fragment</D:literal>
        </d:eq>
        <d:gte>
          <d:prop> <f:LASTMODIFIEDTIME/> </D:prop>
          <d:literal>1999-10-10</D:literal>
        </d:gte>
        <d:not>
          <d:eq>
            <d:prop> <f:CREATOR/> </D:prop>
            <d:literal>Jeff Milton</D:literal>
          </d:eq>
        </d:not>
      </d:and>
    </d:where>
  <d:limit>
```

```

    <d:nresults>2</d:nresults>
  </d:limit>
</d:basicsearch>
</d:searchrequest>

```

The Dispatcher passes the query to the Meta Data Store where the query is converted to SQL and executed against DB2. The results are converted back to the DASL format.

Currently, we are using the d:nresults tag to indicate a range of results to be returned. (e.g. <d:nresults>1-50</d:nresults>) This enables the client to request subsequent "pages" from a search with a large number of results.

#### Dispatcher response:

```

HTTP/1.1 207 Multi-Status
Content-Type: text/xml; charset="utf-8"
Content-Length: length

<?xml version="1.0"?>
<d:multistatus xmlns:d="DAV:" xmlns:f="Franklin:">
  <f:responsesummary>
    <f:start>1</f:start>
    <f:end>2</f:end>
    <f:total>43</f:total>
  </f:responsesummary>
  <d:response>
    <d:href>http://franklin.adtech.ibm.com/43987548-tfrg.xml</d:href>
    <d:propstat>
      <d:prop>
        <f:FRAGMENTID>43987548-tfrg.xml</f:FRAGMENTID>
        <f:DTD>Textfragment</f:DTD>
        <f:PAGETYPE>Fragment</f:PAGETYPE>
        <f:LASTMODIFIEDTIME>2000-01-07-
14.08.09.328000</f:LASTMODIFIEDTIME>
        <f:TITLE>Lou Gerstner's bio</f:TITLE>
        <f:CREATOR/>Joe Moe</f:CREATOR>
      </d:prop>
    </d:propstat>
  </d:response>
  <d:response>
    <d:href>http://franklin.adtech.ibm.com/9999999-frg.xml</d:href>
    <d:propstat>
      <d:prop>
        <f:FRAGMENTID>9999999-tfrg.xml</f:FRAGMENTID>
        <f:DTD>Listfragment</f:DTD>
        <f:PAGETYPE>Fragment</f:PAGETYPE>
        <f:LASTMODIFIEDTIME>2000-01-07-
14.08.09.328111</f:LASTMODIFIEDTIME>
        <f:TITLE>Highlights for Netfinity 8500R</f:TITLE>
        <f:CREATOR/>Jane Mane</f:CREATOR>
      </d:prop>
    </d:propstat>
  </d:response>
</d:multistatus>

```

**Comment [LW6]:** This example is not quite right. (e.g. the numbers aren't specified this way I don't think)

The Search UI parses the results and displays them in the results table. From the table, the editor can select items and merge them into the Active List in the Editor UI.

Future: If more than the requested number of hits exist in the database, the Search UI uses the `RESPONSESUMMARY` element in the result list to determine how to manage the “Next” and “Previous” buttons that allow further results or to go back to a previous set of results.

## Preview

Before checking in a servable, the editor can preview the final page to be published. The preview icon in the Editor UI is active only when editing a servable. Requesting a preview sends a request to the Preview Manager servlet with the temporary contents of the servable XML. The Preview Manager expands the servable with contents of any subfragments, assembles the page with all included style sheets using LotusXSL, and returns the resulting HTML output to the client.

The Editor UI launches the web browser specified in the *franklin.properties* file and displays the temporary output. Once satisfied, the editor can check in the servable. Servables previously checked in (e.g., servables returned as search results) can also be previewed.

(Future: preview of an HTML page does not indicate to the editor which fragment produced any given area of the page. Need to devise a way to display the source element.)

## Dispatcher

### Session Management

When a user logs on using the Editor UI, as described in the Section Editor Interface & Dispatcher Communication: Login, the dispatcher checks for a valid user and password by consulting the DOM, generated at startup, which contains all user information. If they are valid, the dispatcher adds the user to the *currentusers* hash table and generates a unique session identifier, *sessionId*. *SessionId* is created using the java *UID()* call that guarantees to return a unique identifier for the machine the process is running on.

If the same user logs on a second time from another terminal without terminating the earlier session, the earlier *sessionId* is overwritten by a new one, and the old session becomes invalid.

At logout, the users entry is removed from the *currentusers* hash table.

Future: the class that manages the user sessions must be serializable, so that its state can be saved and reloaded if the Franklin Server servlet needs to be restarted.

### System Data Creation

When a dispatcher receives the check in request from the Editor UI, it handles new and modified fragments differently.

For a new fragment, the Dispatcher fills in the following so-called `SYSTEM` elements in the DOM built from the incoming fragment:

```
<SYSTEM>
  <FRAGMENTID>46ba850dc8cf1f3c1007f33-tfrg.xml</FRAGMENTID>
  <CREATOR>Joe Doe</CREATOR>
  <MODIFIER>Joe Doe</MODIFIER>
  <CREATIONTIME>2000-01-07-14.08.09.328000</CREATIONTIME>
  <LASTMODIFIEDTIME>2000-01-07-14.08.09.328000</LASTMODIFIEDTIME>
  <PAGETYPE>Fragment</PAGETYPE>
  <CONTENTSIZE>537</CONTENTSIZE>
</SYSTEM>
```

`FRAGMENTID` is the unique identifier for the fragment. This identifier is created using the java `UID()` call which returns a guaranteed unique identifier for the machine where the process is running. To the UID, the dispatcher appends the suffix `-tfrg.xml` for simple fragments, `-bfrg.xml` for compound fragments, or `-tsrv.xml` for servables. To know which suffix to append, the dispatcher consults the `didToType` hash table, built at startup to cache the mapping between DTDs and their types.

`CREATOR` is the name of the user who originally checked in the new fragment. The dispatcher gets this name by calling the `sessionIdToUser` method, which retrieves the user name from the `currentusers` hash table based on the `sessionId`.

`MODIFIER` is the name of the user who is currently checking in the fragment. `MODIFIER` and `CREATOR` are the same when creating the system data for a new fragment.

`CREATIONTIME` is the Java generated time stamp of the system data creation time at original check-in.

`LASTMODIFIEDTIME` is the Java generated time stamp of the system data update time at subsequent check-ins. `CREATIONTIME` and `LASTMODIFIEDTIME` are the same for a new fragment.

`PAGETYPE` is set to either "FRAGMENT" or "SERVABLE". The dispatcher sets `PAGETYPE` by consulting the `didToType` hash table, built at startup to cache the mapping between DTDs and their types. This field is important because processing of fragments and servables is different in the Editor UI as well as in the content store module.

`CONTENTSIZE` is the size in bytes of the checked-in fragment including any included binary data. The dispatcher calculates this after filling in the system data but before extracting any binary data. Thus, this is the size of the string being sent over the network between Editor UI and the dispatcher.

## Name Space Management

The name space manager module of the dispatcher manages all reading and writing of files. It abstracts away the actual file system from all other modules, so that they do not have to keep track of specialized directories.

The name space manager provides the functionality to read and write into the file system DOMs, corresponding XML strings that represent fragments or servables. At dispatcher startup, the initialization file is read in, and the variables defining the directories become available to the name space manager.

When writing a compound fragment, the name space manager also extracts any encoded multimedia files and style sheets and writes them into the appropriate directories. On the other hand, when reading a compound fragment, it encodes any external files into the XML and returns the DOM to the module requesting it.

In addition to the dispatcher, the content store uses the name space manager as well. The content store uses it to read fragments from the file system and to write HTML/HDML/DHTML output files from page assembly into the file system.

The advantage of separating the name space manager from the rest of the Franklin server is to isolate the knowledge about dedicated file system directories to one module. For example, if *xmlDir* needed to be split up into a series of second-level directories to limit the size of any one directory, only the name space manager would need to know about the change. Under *xmlDir* could reside 10 child directories 0/, 1/, ...9/ and a fragment would be stored in one of them based on a load-balancing algorithm handled by the name space manager.

### **Coordination Between Modules at Check-in**

[describe the 3 phase save to file system, meta store and tm, with the fact that tm is asynchronous. Maintenance of pending jobs table by dispatcher, and roll-back]

### **Lock Management**

As described in the sections Editor Interface & Dispatcher Communication: Check-in and Check-out, the Editor UI and dispatcher exchange lock tokens during the LOCK and UNLOCK requests from the Editor UI.

When the dispatcher issues a lock token, it uses the Java *UUID()* call to create a unique identifier. It sends the token along with the user name and the lock time to the Editor UI in the body of the response and stores another copy of this information in the meta-data store as described in the section Meta Data Store: Lock Management.

When the dispatcher receives an UNLOCK request with a lock token from the Editor UI, it needs to verify that the token matches the one stored in the meta-data store. If they match, the dispatcher issues a call to delete the lock in the meta-data store.

The dispatcher has two other ways to manage locks if problems occur. If the Editor UI requests that all locks held by the current user be released, the dispatcher issues the call *releaseLockByUser* to the meta-data store. When the dispatcher is restarted due to a system crash, all pending locks in the meta-data store can be released at startup with the call *releaseLockAll*.

## Error Handling

All Franklin server side components abide to the same Franklin error handling scheme. When any of the components called by dispatcher, namely meta-data store, name space manager, user manager, or content manager, catch or throw a Java exception, they convert it to a Franklin exception and fill in all details about the context and the conditions where the error occurred.

A Franklin exception contains the following attributes:

- myError* - the Franklin error code
- myHttpError* - the HTTP error code corresponding to the Franklin error code
- myMessage* - explanation of error, presented to user of the Client application
- myDestination* - one of ERROR\_USER, ERROR\_LOG, ERROR\_ADMIN to indicate where the error should be directed
- myException* - the originally caught exception, if there is one

The dispatcher module routes the exception based on the attributes. If *myDestination* is set to ERROR\_USER, the dispatcher returns the exception to the Editor UI which displays the error to the user. If it is set to ERROR\_LOG, the error is written to the error log file, and for ERROR\_ADMIN, the process notifies the system administrator.

## Meta Data Store

The meta-data store allows the indexing and searching of fragments and servables. All or a subset of the XML elements can be set to be indexed. For a large content site this allows users to quickly locate content objects of interest. The meta-data store also manages the lock information of content objects.

## DB2 XML Extenders

Franklin uses XML Extenders for DB2 to index a subset of the XML elements of fragments and servables. To accomplish indexing, XML Extenders uses a Document Access Definition (DAD) that maps an XML element to a column in a DB2 table.

DB2 XML Extenders provides two different methods, namely XColumn and XCollection. We have implemented both methods in Franklin and describe both in this document. We recommend using the XCollection as it is more flexible.

### XColumn

The current XColumn implementation of XML Extenders can only map one DTD to one or more DB2 tables. In order to map all Franklin DTDs to one or more common tables, the dispatcher converts all DTDs to a so-called *universal* DTD, which contains all elements to be indexed in the set of DTDs. For this universal DTD, two DADs are created based on the XML Extenders syntax.

Two DADs are needed, because the current XColumn implementation does not support inserting elements that occur only once in the XML and those that occur more than once using a single

DAD. Thus, the examples in this section show two DADs that map values from the universal DTD.

When designing the DADs, all elements that appear only once, or single-occurrence elements, can be mapped to one table. Any elements that can appear more than once, or multi-occurrence elements, need to be mapped each into separate dedicated tables. The administrator creates a view between the single-occurrence table and the multi-occurrence tables to perform searches across all tables with one command.

A DAD specifies the following items:

- table name = name of the DB2 table
- column name = name of the column in the encapsulating table
- column type = data type of the column
- column path = XPath expression from the root to the element to be indexed in the column
- column multi-occurrence = flag to indicate whether the element at the path can occur more than once

Example of a DAD mapping single-occurrence elements:

```
<?xml version="1.0"?>
<!DOCTYPE DAD SYSTEM "c:\dxx\franklin\dttd\universal.dtd">
<DAD>
  <dttdid>UNIVERSALDTD</dttdid>
  <validation>NO</validation>
<Xcolumn>
  <table name="META.MAIN">
    <column name="CREATOR"
      type="varchar(50)"
      path="/UNIVERSAL/SYSTEM/CREATOR"
      multi_occurrence="NO">
    </column>
    <column name="CREATIONTIME"
      type="TIMESTAMP"
      path="/UNIVERSAL/SYSTEM/CREATIONTIME"
      multi_occurrence="NO">
    </column>
    <column name="LASTMODIFIEDTIME"
      type="TIMESTAMP"
      path="/UNIVERSAL/SYSTEM/LASTMODIFIEDTIME"
      multi_occurrence="NO">
    </column>
    <column name="PAGETYPE"
      type="char(10)"
      path="/UNIVERSAL/SYSTEM/PAGETYPE"
      multi_occurrence="NO">
    </column>
    <column name="CONTENTSIZE"
      type="integer"
      path="/UNIVERSAL/SYSTEM/CONTENTSIZE"
      multi_occurrence="NO">
    </column>
    <column name="TITLE"
      type="varchar(250)"
```



```

        path="/UNIVERSAL/TITLE"
        multi_occurrence="NO">
    </column>
    <column name="DOCTYPE"
        type="varchar(32)"
        path="/UNIVERSAL/DOCTYPE"
        multi_occurrence="NO">
    </column>
    <column name="DTDURL"
        type="varchar(512)"
        path="/UNIVERSAL/DTDURL"
        multi_occurrence="NO">
    </column>
</table>
</Xcolumn>

```

Example of a DAD mapping multi-occurrence elements:

```

<?xml version="1.0"?>
<!DOCTYPE DAD SYSTEM "c:\dxx\franklin\dtd\universal.dtd">
<DAD>
    <dttdid>UNIVERSALDTD</dttdid>
    <validation>NO</validation>
    <Xcolumn>
        <table name="META.CATEGORY">
            <column name="CATEGORY"
                type="varchar(128)"
                path="/UNIVERSAL/CATEGORY"
                multi_occurrence="YES">
            </column>
        </table>
        <table name="META.KEYWORD">
            <column name="KEYWORD"
                type="varchar(64)"
                path="/UNIVERSAL/KEYWORD"
                multi_occurrence="YES">
            </column>
        </table>
    </Xcolumn>
</DAD>

```

The tables created by these DADs are shown in the Section Table Design.

### XCollection

The XCollection implementation of XML Extenders requires one DAD for each DTD to be mapped into DB2. Unlike XColumn, different DTDs can be mapped to the same DB2 tables. Thus, the XCollection implementation does not require documents to be converted to abide to one universal DTD.

[However, the current XCollection also has a few problem. We have implemented a temporary fix into the meta data store until the problems are addressed]

The DAD corresponding to textfragment.dtd is shown below:

[add DAD here]

## Table Design

When a DAD is loaded into DB2, the tables and columns specified in it are automatically created. After the tables are created, the administrator needs to add the following items to the database:

- a column named ISCOMMIT in the table storing the single-occurrence elements. This column indicates if the fragment has successfully been committed to the content store and file system
- indexing on any columns that will be searched
- a view which combines data from all tables for searching

The database tables created by the previous DAD examples are shown below, along with keys, indexes, and the ISCOMMIT column created by the administrator.

Schema:

META: Used for all the tables used by Franklin

INDEX: Used for all the indexes used by Franklin

Tables Generated by DAD:

META.MAIN: This table contains all the elements that occur at most once in the input XML document

| Column Name      | Data Type    | Default | Key               | Index                      |
|------------------|--------------|---------|-------------------|----------------------------|
| FRAGMENTID       | CHAR(56)     |         | Fk -><br>unifrag1 | index.fragment<br>id       |
| CREATOR          | VARCHAR(50)  |         |                   | index.creator              |
| CREATIONTIME     | TIMESTAMP    |         |                   | index.creation<br>time     |
| LASTMODIFIEDTIME | TIMESTAMP    |         |                   | index.lastmodi<br>fiedtime |
| CONTENTSIZE      | INTEGER      |         |                   |                            |
| TITLE            | VARCHAR      |         |                   | index.title                |
| PAGETYPE         | CHAR(10)     |         |                   | index.pagesize             |
| DOCTYPE          | VARCHAR(32)  |         |                   | index.doctype              |
| DTDURL           |              |         |                   | index.dtdurl               |
|                  | VARCHAR(512) |         |                   |                            |
| ISCOMMIT         | INTEGER      | 0       |                   |                            |

META.KEYWORD: This table contains the KEYWORD elements associated with a given FRAGMENTID:

| Column Name | Data Type | Default | Key               | Index                |
|-------------|-----------|---------|-------------------|----------------------|
| FRAGMENTID  | CHAR(56)  |         | Fk -><br>unifrag2 | index.fragment<br>ed |

|         |             |               |
|---------|-------------|---------------|
| KEYWORD | VARCHAR(64) | index.keyword |
|---------|-------------|---------------|

META.CATEGORY: This table contains the CATEGORY elements associated with a given FRAGMENTID.

| Column Name | Data Type    | Default | key | index                |
|-------------|--------------|---------|-----|----------------------|
| FRAGMENTID  | CHAR(56)     |         | fk  | index.fragment<br>id |
| CATEGORY    | VARCHAR(128) |         |     | index.category       |

UNIFRAG1: This table contains two fields,

Fragmentid - the fragmentid for a given XML file

Fragmentxml - the XML file stored in the file system

The function of this table is to trigger filling META.MAIN when a record is inserted

| Column Name | Data Type      | Default | key | index |
|-------------|----------------|---------|-----|-------|
| FRAGMENTID  | CHAR(56)       |         | PK  |       |
| FRAGMENTXML | DB2XML.XMLFILE |         |     |       |

UNIFRAG2: This table has the same structure as UNIFRAG1. The function is to trigger filling META.KEYWORD and META.CATEGORY when a record is inserted

| Column Name | Data Type      | Default | key | index |
|-------------|----------------|---------|-----|-------|
| FRAGMENTID  | CHAR(56)       |         | PK  |       |
| FRAGMENTXML | DB2XML.XMLFILE |         |     |       |

## Index

When a fragment or servable is checked in, the dispatcher converts the XML file to abide to the universal DTD for indexing in the XColumn implementation. After the conversion, it sends the universal XML to the meta-data store. In the XCollection implementation, the fragment or servable is sent as is to the meta-data store.

For XCollection, the meta-data store enters a pointer to the file into the two tables named UNIFRAG1 and UNIFRAG2 in the previous example. When the record is entered, a trigger copies the elements specified in the DAD to the appropriate tables. The elements are now ready for searching.

For XColumn ...

## Search

When the Search UI sends a DASL search expression, described in the section *Editor Interface & Dispatcher Communication: Search*, to the dispatcher it passes it directly to the meta-data store. The meta-data store converts it to an SQL expression, executes the SQL query and converts the results to the DASL output format.

An example DASL query:

```
<?xml version="1.0"?>
<d:searchrequest xmlns:d="DAV:" xmlns:f="Franklin:">
  <d:basicsearch>
    <d:select>
      <f:prop>
        <f:FRAGMENTID/>
        <f:DOCTYPE/>
        <f:LASTMODIFIEDTIME/>
        <f:TITLE/>
        <f:CREATOR/>
        <f:PAGETYPE/>
      </f:prop>
    </d:select>
    <d:from>
      <d:scope>
        <d:href/>
        <d:depth>infinity</d:depth>
      </d:scope>
    </d:from>
    <d:where>
      <d:and>
        <d:like>
          <d:prop>
            <f:KEYWORD/>
          </d:prop>
          <d:literal>SERVER</d:literal>
        </d:like>
        <d:like>
          <d:prop>
            <f:PAGETYPE/>
          </d:prop>
          <d:literal>FRAGMENT</d:literal>
        </d:like>
      </d:and>
    </d:where>
    <d:limit>
      <d:nresults>1-50</d:nresults>
    </d:limit>
  </d:basicsearch>
</d:searchrequest>
```

The above DASL query converted to SQL:

```
SELECT DISTINCT fragmentID, doctype, lastModifiedTime, title, creator,
pagetype FROM meta.metaaall where KEYWORD LIKE 'SERVER%' and PAGETYPE LIKE
'FRAGMENT' and iscommit = 1
```

An example DASL output to above query:

```
<?xml version="1.0"?>
<d:multistatus xmlns:d ="DAV:" xmlns:f="Franklin:">
  <f:responsesummary>
    <f:start>1</f:start>
    <f:end>1</f:end>
    <f:total>1</f:total>
  </f:responsesummary>/
  <d:response>
    <d:href>http://franklinserver/46b3e60dccbcd84db007777-tfrg.xml
    </d:href>
    <d:propstat>
      <d:prop>
        <f:FRAGMENTID>46b3e60dccbcd84db007777-tfrg.xml</f:FRAGMENTID>
        <f:DOCTYPE>TEXTFRAGMENT</f:DOCTYPE>
        <f:LASTMODIFIEDTIME>2000-01-21 15:07:53.375000</f:LASTMODIFIEDTIME>
        <f:TITLE>Netfinity Highlights</f:TITLE>
        <f:CREATOR>Joe Doe</f:CREATOR>
        <f:PAGETYPE>FRAGMENT</f:PAGETYPE>
      </d:prop>
    </d:propstat>
  </d:response>
</d:multistatus>
```

If the number of results is larger than the result set requested by the Search UI, the meta-data store writes the full results into a cache file and only encodes the requested number into the DASL output. The cache file is named using an expression that encodes the query and the *sessionId* of the user. When the Search UI requests the “Next” set of results for the same query, the meta-data store does not re-execute the query. Instead it consults the cache file and extracts the appropriate next set of results. This caching scheme saves the meta-data store from executing the same query several times if the user is simply navigating within the same result set.

Note that if the contents were to change in DB2, the user does not see the updated results until he re-executes the original query without the “Next” or “Previous” flags.

## Lock Management

When the dispatcher receives a LOCK command from the Editor UI, it creates a lock for a fragment or servable and sends the lock to the meta-data store to save in DB2. The lock information, namely LOCKTOKEN, LOCKEDOWNER, and LOCKTIME, is stored in the META.LOCK table of the following format:

| Column Name | Data Type   | Default | Key | Index |
|-------------|-------------|---------|-----|-------|
| FRAGMENTID  | CHAR(56)    |         | PK  |       |
| LOCKOWNER   | VARCHAR(50) |         |     |       |
| LOCKTIME    | TIMESTAMP   |         |     |       |
| LOCKTOKEN   | VARCHAR(34) |         |     |       |

When the dispatcher receives an `UNLOCK` command from the Editor UI, it issues the unlock command to the meta-data store. The meta-data store deletes the record from the `META_LOCK` table.

## The Content Store – Daedalus (a.k.a Trigger Monitor)

This section describes how the Franklin project has extended three of the Daedalus handlers to enable the system to manage XML fragments and XSL style sheets. For the full Daedalus API documentation, read <http://w3.watson.ibm.com/~challngr/papers/daedalus/index.html>.

Daedalus is written in pure Java and implements *handlers* as pre-defined actions performed on the various configurable resources. Flexibility is achieved via Java's dynamic loading abilities, by more sophisticated configuration of the resources used by Daedalus, and through the use of *handler* preprocessing of input data. Most entities defined in a configuration file implement a public Java interface. Users may create their own classes to accomplish localized goals, and specify those classes in the configuration file. This permits run-time flexibility without requiring sophisticated efforts on the part of most users, since default classes are supplied to handle the most common situations.

For Franklin, we have created our own classes to implement three handlers: the Extension Parser, the Dependency Parser, and the Page Assembler.

### Extension Parser

Within Franklin, Daedalus manages different types of files differently based on their extensions. Servables, simple, compound, and index fragments, style sheets and multimedia assets are all treated slightly differently in the publishing flow.

The Franklin Extension Parser takes in a name of a fragment, and returns an extension used in the Daedalus configuration files to specify actions to take during the publish process:

```
123445-trfg.xml    => tfrg  (text fragment)
123445-bfrg.xml    => bfrg  (binary wrapper fragment)
123445-ifrg.xml    => ifrg  (index fragment)
123445-tsrv.xml    => tsrv  (text servable fragment)
123445-sfrg.xml    => sfrg  (style sheet wrapper fragment)
web_index.xsl      => xsl   (style sheet)
```

The appropriate behavior for each type of fragment (e.g. source-to-sink, assemble-to-sink) is defined in the Daedalus configuration files. Generally, only servables are assembled to the sink.

### Dependency Parser

The Franklin Dependency Parser reads through an XML objects that has been checked in and detects two types of dependencies:

1. Servables and fragments can include subfragments, these get stored as an edge of type "composition" in the Daedalus Object Dependency Graph (ODG).
2. Compound fragments include an associated content file, this dependency gets stored as an edge type "composition" in the ODG.
3. Servables can include style sheets, these get stored as an edge type "stylesheet" in the ODG.

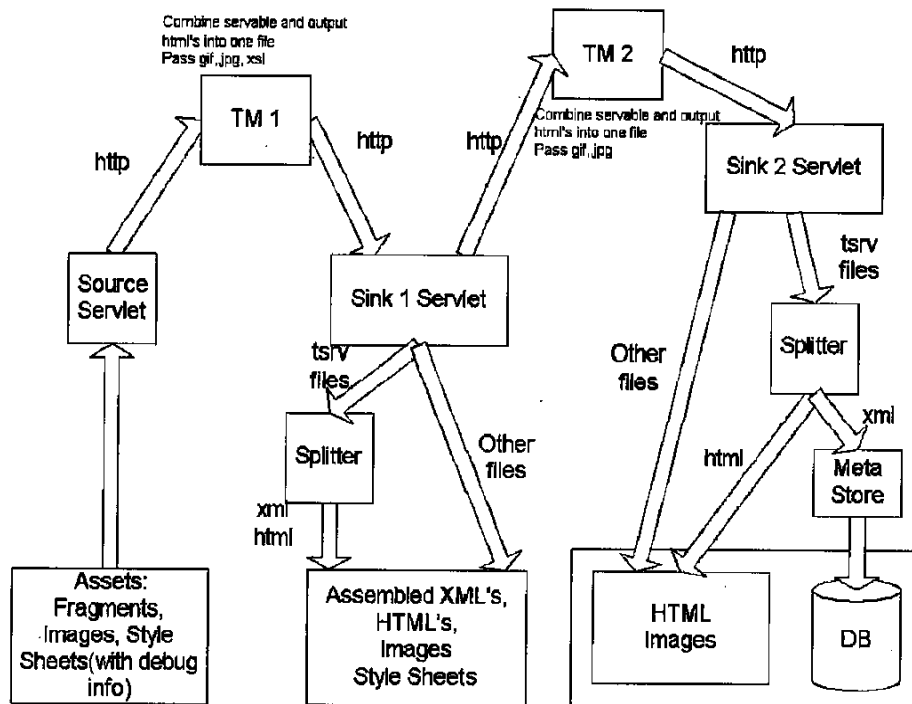
Dependencies are considered to point from the subfragments to the fragments that include them. For binary wrappers, one composition dependency points from the wrapper to the fragment that includes it, and another points from the wrapper to the binary data file that it wraps. For stylesheets, a composition dependency points from the wrapper to the stylesheet, and a stylesheet dependency points from the stylesheet to the servable that uses it.

## Page Assembler

The Franklin Page Assembler expands a servable by including the contents of all included subfragments, and combines the resulting XML with the one or more style sheets using LotusXSL to produce HTML output files. The extension of each of the resulting files is determined from the stylesheet names (e.g. web\_xxx\_html.xml). The assembled XML and all the resulting HTML files are written to one file, which is later split up in the Dispatcher, and the HTML files are written to the appropriate directories in the sink or server.

## Chaining of Trigger Monitors

Currently, two Trigger Monitors are used in the publish process. They share an ODG, and the sink of the first one is the source of the second, creating a publishing chain. The following diagram shows the set-up of the Content store in its entirety:



When a fragment is checked in to the Content store, it is added to the shared ODG, and a publish command is issued to the first TM. The TM reads the fragment XML from the source servlet, uses the extension parser to find its extension, and then uses the dependency parser to find dependencies to add to the ODG. The page assembler then pulls in the contents of the fragment's subfragments, and if the fragment is a servable, combines it with its stylesheets to produce the output HTMLs. The servable XMLs, output HTMLs, binary files, and stylesheets are sent to the servlet specified as the sink of the first TM.

When a servable has been approved, a publish command on the servable fragment is issued to the second TM. It is reassembled and recombined with its XSLs, and the resulting XML and HTMLs are published to the second sink servlet. Binary files (such as images) are also published to the second sink. This is where the web server pulls the final HTML and image files from.

## **Example application**

- managing Netfinity pages at ibm.com

## **Summary**

## **Appendix 1: Error Codes**

# Status code (101) indicating the server is switching protocols  
# according to Upgrade header. (SC\_SWITCHING\_PROTOCOLS)

X1 = 101

# Status code (200) indicating the request succeeded normally. (SC\_OK)

G200 = 200

P200 = 200

OK = 200

# Status code (201) indicating the request succeeded and created  
# a new resource on the server. (SC\_CREATED)

X3 = 201

# Status code (202) indicating that a request was accepted for  
# processing, but was not completed. (SC\_ACCEPTED)

X4 = 202

# Status code (203) indicating that the meta information presented



# by the client did not originate from the server.  
(SC\_NON\_AUTHORITATIVE\_INFORMATION)

X5 = 203

# Status code (204) indicating that the request succeeded but that  
# there was no new information to return. (SC\_NO\_CONTENT)

X6 = 204

# Status code (205) indicating that the agent *SHOULD* reset  
# the document view which caused the request to be sent. (SC\_RESET\_CONTENT)

X7 = 205

# Status code (206) indicating that the server has fulfilled  
# the partial GET request for the resource. (SC\_PARTIAL\_CONTENT)

X8 = 206

# Status code (300) indicating that the requested resource  
# corresponds to any one of a set of representations, each with  
# its own specific location. (SC\_MULTIPLE\_CHOICES)

X9 = 300

# Status code (301) indicating that the resource has permanently  
# moved to a new location, and that future references should use a  
# new URI with their requests. (SC\_MOVED\_PERMANENTLY)

X10 = 301

# Status code (302) indicating that the resource has temporarily  
# moved to another location, but that future references should  
# still use the original URI to access the resource. (SC\_MOVED\_TEMPORARILY)

X11 = 302

# Status code (303) indicating that the response to the request  
# can be found under a different URI. (SC\_SEE\_OTHER)

X12 = 303

# Status code (304) indicating that a conditional GET operation  
# found that the resource was available and not modified. (SC\_NOT\_MODIFIED)

X13 = 304

# Status code (305) indicating that the requested resource  
# <em>MUST</em> be accessed through the proxy given by the  
# <code><em>Location</em></code> field. (SC\_USE\_PROXY)

X14 = 305

# Status code (400) indicating the request sent by the client was  
# syntactically incorrect. (SC\_BAD\_REQUEST)

# THIS IS THE GENERAL (DEFAULT) ERROR RETURNED WHEN ANYTHING BREAKS

#check c102 to make sure it belongs in this area (400)

C101 = 400

C102 = 400

C103 = 400

C123 = 400

C124 = 400

D104 = 400

D110 = 400

P101 = 400

V101 = 400

F100 = 400

F101 = 400

F102 = 400

F103 = 400

F104 = 400

F105 = 400

R101 = 400

R112 = 400

R102 = 400

R103 = 400

R105 = 400

D101 = 400

D111 = 400

D145 = 400

G103 = 400

# Status code (401) indicating that the request requires HTTP  
# authentication. (SC\_UNAUTHORIZED)

G101 = 401

U101 = 401

U102 = 401

U103 = 401

L101 = 401  
 L102 = 401  
 G104 = 401  
 # Status code (402) reserved for future use. (SC\_PAYMENT\_REQUIRED)  
  
 X17 = 402  
  
 # Status code (403) indicating the server understood the request  
 # but refused to fulfill it. (SC\_FORBIDDEN)  
  
 G102 = 403  
 D123 = 403  
 # Status code (404) indicating that the requested resource is not  
 # available. (SC\_NOT\_FOUND)  
  
 X19 = 404  
  
 # Status code (405) indicating that the method specified in the  
 # <code><em>Request-Line</em></code> is not allowed for the resource  
 # identified by the <code><em>Request-URI</em></code>.  
 (SC\_METHOD\_NOT\_ALLOWED)  
  
 X20 = 405  
  
 # Status code (406) indicating that the resource identified by the  
 # request is only capable of generating response entities which have  
 # content characteristics not acceptable according to the accept  
 # headers sent in the request. (SC\_NOT\_ACCEPTABLE)  
  
 F108 = 406  
  
 # Status code (407) indicating that the client <em>MUST</em> first  
 # authenticate itself with the proxy. (SC\_PROXY\_AUTHENTICATION\_REQUIRED)  
  
 X22 = 407  
  
 # Status code (408) indicating that the client did not produce a  
 # request within the time that the server was prepared to wait. (SC\_REQUEST\_TIMEOUT)  
  
 X23 = 408  
  
 # Status code (409) indicating that the request could not be  
 # completed due to a conflict with the current state of the  
 # resource. (SC\_CONFLICT)  
  
 X24 = 409

# Status code (410) indicating that the resource is no longer  
# available at the server and no forwarding address is known.  
# This condition `<em>SHOULD</em>` be considered permanent. (SC\_GONE)

X25 = 410

# Status code (411) indicating that the request cannot be handled  
# without a defined `<code><em>Content-Length</em></code>`. (SC\_LENGTH\_REQUIRED)

X26 = 411

# Status code (412) indicating that the precondition given in one  
# or more of the request-header fields evaluated to false when it  
# was tested on the server. (SC\_PRECONDITION\_FAILED)

X27 = 412

# Status code (413) indicating that the server is refusing to process  
# the request because the request entity is larger than the server is  
# willing or able to process. (SC\_REQUEST\_ENTITY\_TOO\_LARGE)

X28 = 413

# Status code (414) indicating that the server is refusing to service  
# the request because the `<code><em>Request-URI</em></code>` is longer  
# than the server is willing to interpret. (SC\_REQUEST\_URI\_TOO\_LONG)

X29 = 414

# Status code (415) indicating that the server is refusing to service  
# the request because the entity of the request is in a format not  
# supported by the requested resource for the requested method.  
(SC\_UNSUPPORTED\_MEDIA\_TYPE)

X30 = 415

# Status code (500) indicating an error inside the HTTP server  
# which prevented it from fulfilling the request. (SC\_INTERNAL\_SERVER\_ERROR)

X31 = 500

# Status code (501) indicating the HTTP server does not support  
# the functionality needed to fulfill the request. (SC\_NOT\_IMPLEMENTED)

X32 = 501

# Status code (502) indicating that the HTTP server received an  
# invalid response from a server it consulted when acting as a  
# proxy or gateway. (SC\_BAD\_GATEWAY)

X33 = 502

# Status code (503) indicating that the HTTP server is  
# temporarily overloaded, and unable to handle the request. (SC\_SERVICE\_UNAVAILABLE)

X34 = 503

# Status code (504) indicating that the server did not receive  
# a timely response from the upstream server while acting as  
# a gateway or proxy. (SC\_GATEWAY\_TIMEOUT)

X35 = 504

# Status code (505) indicating that the server does not support  
# or refuses to support the HTTP protocol version that was used  
# in the request message. (SC\_HTTP\_VERSION\_NOT\_SUPPORTED)

X36 = 505

# Error code in server.dispatcher.Dispatcher

# D104 = Error in Dispatcher.doPost()  
# D110 = Fragment Type not Specified or incorrect  
# P101 = Error in Dispatcher.putParseRequest()  
# V101 = Error validating user

# Error codes in server.Fragment

# F100 = Error in Fragment.fragment2XML()  
# F101 = Error opening Fragment.XML2fragment()  
# F102 = Error parsing XML file in Fragment.XML2fragment()  
# F103 = Error calling readNode("+element+")  
# F104 = Error calling getElementValue  
# F105 = Error calling getElementType  
# F120 = Cannot close StringWriter

# Error codes in server.TextUtils

# R101 = Error in TextFile.read("+filename+")  
# R112 = Error in TextFile.readFileWOException("+filename+")  
# R102 = Error in TextUtils.createDOMFromFile("+xmlfile+")

# R103 = TextUtils.createDomFromFile SAX exception  
# R105 = TextUtils.createDomFromFile IO exception  
# R112 = Error in TextFile.readTextFileWOException("+filename+")

# Error codes in server.dispatcher.DomUtils

# D101 = DomUtils.documentToTuniverse TXDOM Exception  
# D111 = Error in DomUtils.documentToUniversal  
# D123 = Missing or invalid sessionId on checkin

# Error codes in server.dispatcher.Users

# these have destination ERROR\_USER

# U101= User + username + not defined  
# U102 = Wrong password for user + username  
# U103 = User with sessionId + sessionId + not defined

# this has destination ERROR\_LOG

# U110 = Users.methodname IO exception

# Error codes in server.dispatcher.checkIn

# C103 = Error in document2String  
# C102 = Checkin Error  
# C101 = Users.checkProvledge error

# DE111 = Delete Error

# G200 = successful get  
# P200 = successful put

# Locking errors

# L101 = Lock tokens do not match  
# L102 = missing lock token

#MISC

# F108 = invalid FragmentID  
# C123 = error in fragment2XML  
# C124 = Failed saving content to metadata store

# G104 = Authorization String Empty  
# D145 = error parsing input stream

## Evaluation of Franklin and Kittyhawk Integration Concept

Please use the scenarios to assess the value of an integrated version of Kittyhawk and Franklin Editor. After you complete each scenario, please answer the corresponding questions.

In your assessment of the value of the Franklin concept, please remember there may be UI problems and bugs in this pilot implementation. Try to assess the value of the concept rather than the value of this current implementation.

Use the role Editor in FranklinRole field in your user profile. To create projects and assign tasks, you need to be assigned the Kittyhawk role Administrator.

Note that for Scenarios 1-3 you are playing the role of a Regular User. For Scenarios 4-5, you are playing the role of a Superuser. Before beginning tasks 1-3, make sure your Franklin role is KittyHawk User profile is set to "Editor" and Superuser to "No". Change to the Superuser to "Yes" for tasks 4-5.

I called these A, B, C etc. just to distinguish from existing ones. They will be renumbered 1,2,3 after we decide which ones to

### Scenario A: Create ar

Set Superuser to "Yes" at

Assume that: You are the and thumbnails for the Ti pages. Other editors will l

See the definitions of IMA

<http://franklin.adtech.intel>

[Here we should give the

Or should we make this o

I wanted this to be differe

each other, does that mak

B

### gments

create and publish images  
omotions, news and product  
ate at least one of each.

re and publish a fragment.  
ruser yet????

that Scenarios build on

### Scenario B: Assign and Complete a "Create and Publish" Task for a Product Spec fragment

Set Superuser to "No" and Franklin Role to "Editor" in KH

Assume that: Enterprise Sites need to host Product information on the latest model in the ThinkPad line. This work needs to be delegated to an editor responsible for creating product specs.

See the definition of PRODUCT SPEC at

<http://franklin.adtech.internet.ibm.com/franklin/downloads/ESiteDTDs.html>

[This would be essentially Scenario 1 tailored to a Product Spec]

### Scenario C: Assign and Complete a "Create and Publish" Task for a Product Page

Set Superuser to "No" and Franklin Role to "Editor" in KH

Assume that: Enterprise Sites needs to host a series of pages on the latest model in the ThinkPad line. The product spec, images and thumbnails have been uploaded earlier, now the tasks of creating and publishing a Product Page for the new ThinkPad need to be delegated to an Esite editor. This page is to be published for the web only.

See the definition of PRODUCT PAGE and PRODUCT COMPARISON at  
<http://franklin.adtech.internet.ibm.com/franklin/downloads//ESiteDTDs.html>

[this would be scenario 2 done once for PRODUCT PAGE]

[questions afterwards would emphasize that product spec, image and thumbnail in first two scenarios were reused and did not have to be recreated]

#### **Scenario D: Assign and Complete a "Create" task and a "Publish" Task for a Product Comparison**

Set Superuser to "No" and Franklin Role to "Editor" in KH

Assume that: Enterprise Sites needs to host a page comparing the latest model in the ThinkPad line with older models to highlight it's advantages. The product spec, images and thumbnails have been uploaded earlier, now the task of creating a Product Comparison needs to be delegated to an Esite editor and the task of reviewing the work and publishing it to a QA person. This page should be published for the web only.

See the definition of PRODUCT COMPARISON at  
<http://franklin.adtech.internet.ibm.com/franklin/downloads//ESiteDTDs.html>

[this would be scenario 2 done once for PRODUCT COMPARISON but with separate tasks for Create and Publish]

[questions afterwards would emphasize that product spec, image and thumbnail in first two scenarios were reused and did not have to be recreated]

#### **Scenario E: Assign and Complete a "Edit and Publish" Task for a Product Page**

Set Superuser to "No" and Franklin Role to "Editor" in KH

Assume that: The Product Page on the latest ThinkPad created in Scenario C needs to be published for customers with a PDA and a notification sent to customers with Smart Phones. This task needs to be delegated to an Esite editor.

See the definition of PRODUCT PAGE and PUBLISHINFO at  
<http://franklin.adtech.internet.ibm.com/franklin/downloads//ESiteDTDs.html>

[this would be scenario 2 done once for PRODUCT PAGE this time with Edit+Publish task]

[questions afterwards would ask about the overhead of publishing for PDA and phone.]

#### **Scenario F: Identify a problem on the Esites web sites and request that it be fixed**

Set Superuser to "Yes" and Franklin Role to "Editor" in KH

Assume that: While browsing the Esite, you see a bad typo on the Product Page created in Scenario C. As a Superuser, you bring the page into Franklin, fix the typo, republish, and verify that all affected pages were republished.



See the definition of PRODUCTSPEC at

<http://franklin.adtech.internet.ibm.com/franklin/downloads/ESiteDTDs.html>

[this would be a brand new scenario where user starts by browsing Esites, sees a problem, copies and pastes the URL into Franklin File-> Retrieve by Publish URL, checks out the page, checks out the imbedded PRODUCT SPEC subfragment, fixes the typo, checks in, reviews all affected pages, republishes the PRODUCT SPEC, and then goes back to Esites to see that the page has changed. I can write the step for this one because it includes some new functionality that you may not have tried yet]

### **Scenario 1: Assign and Complete a "Create and Publish" Task for a Fragment**

[this would be incorporated into A and B]

| # | Steps   | Expected Results   |
|---|---|--|
| 1 | KittyHawk Steps: Use Administrator Role   |  |
|   | 1. Create a Request   | 1. A new task with Status "Sent" should be in the task section on the project. |
|   | 2. Create a Project and associate the Request to it   | 2. Check that the task is in the KittyHawk editor queue.                       |
|   | 3. Create a CREATE AND PUBLISH task   |  |
|   | 4. ASSIGN the task to a Franklin Editor with Regular User role (Note: Assign the task to yourself so you can complete it using Franklin Editor) |  |
|   | 5. Provide a DESCRIPTION of the document to be created  |  |
|   | 6. Designate a DTD name (e.g. Thumbnail, Form, Product Spec, or Form)   |  |
|   | 7. SEND the task  |  |
|   | 8. Save and close the task, and project   |  |
| 2 | Franklin steps: Use regular Franklin User (Editor) role   |  |
|   | 1. Launch the Franklin UI and Login   | 1. In Franklin, after publish, fragment should disappear from the Active List. |
|   | 2. Get tasks assigned to you  |  |
|   | 3. Start the task to create the appropriate fragment, fill it in, and check it in   |  |
|   | 4. Approve the final pages (and note that there are no pages to approve because no servable page includes the fragment you just created)        |  |
|   | 5. Publish the fragment   |  |
| 3 | KittyHawk Steps: Use Administrator Role   |  |
|   |   | 1. Task should have Status "Comp".   |
|   |   | 2. Fragment ID should be filled in for the task.                               |

1. Open the project with previously assigned task
2. Click Refresh button above Task Section
3. 'URLs of work' field should be filled on the project form. (If fragment is not used in any servable pages yet, the message should say "No URLs to view. This fragment is not used in any final page")
4. Check that the task is no longer in the KittyHawk editor queue.  
Requesters will be notified that the work has been complete.
- 4 View task in Project form. Since all tasks on the project are complete, you can now click the Begin Final Approval process button.

**Scenario 1 Questions:**

How satisfied are you with the Kittyhawk/Franklin process for completing this scenario?

|                   |              |         |           |                |
|-------------------|--------------|---------|-----------|----------------|
| Very Dissatisfied | Dissatisfied | Neutral | Satisfied | Very Satisfied |
| 1                 | 2            | 3       | 4         | 5              |

Please explain.

If this scenario includes tasks you perform, how does Kittyhawk/Franklin compare to the current method/tool you use? Kittyhawk/Franklin is. . .

|            |       |                |        |             |     |
|------------|-------|----------------|--------|-------------|-----|
| Much Worse | Worse | About the Same | Better | Much Better | N/A |
| 1          | 2     | 3              | 4      | 5           |     |

Please explain.

**Scenario 2: Assign and Complete a "Create and Publish" Task for a Servable Page, use Save as Draft in Franklin**

**[this would be replaced and incorporated into C]**

Repeat the same steps used in Scenario 1, only this time create a servable page by selecting one of the following: promotion, productpage, productcomparison or link.

All other steps are the same as in Scenario 1, except:

| # | Steps   | Expected Results   |
|---|---|--|
| 2 | Franklin steps: Use regular Franklin User (Editor) role                           | 1. Saving as Draft should update the "Create+Publish" Task with the fragmentID |
|   | 1. Launch the Franklin UI and Login   |  |
|   | 2. Get tasks assigned to you  |  |
|   | 3. Verify that the "Create+Publish" task has no FRAGMENTID associated with it.    |  |
|   | 4. Start the task to create the appropriate servable document                     |  |
|   | 5. Search for subfragments to include in the document                             |  |
|   | 6. Cut and paste the desired fragments into the document                          |  |
|   | 7. Select style sheets for the web, the pda, and the Slingshot index page.        |  |
|   | 8. Preview your work in between edits   |  |
|   | 9. Complete filling in the document   |  |
|   | 10. Check in the document as a DRAFT  |  |
|   | 11. Remove it from the Active List  |  |
|   | 12. Refresh tasks assigned to you   |  |
|   | 13. Verify that the "Create+Publish" task now has a FRAGMENTID associated with it |  |
|   | 14. Start the task again  |  |
|   | 15. Make further edits  |  |
|   | 16. Check document in   |  |
|   | 17. Verify that document appears highlighted in Active List                       |  |
|   | 18. Approve final pages   |  |
|   | 19. Publish document  |  |

**Scenario 2 Questions:**

*How satisfied are you with the Kittyhawk/Franklin process for completing this scenario?*

|                          |                     |                |                  |                       |
|--------------------------|---------------------|----------------|------------------|-----------------------|
| <i>Very Dissatisfied</i> | <i>Dissatisfied</i> | <i>Neutral</i> | <i>Satisfied</i> | <i>Very Satisfied</i> |
| 1                        | 2                   | 3              | 4                | 5                     |

*Please explain.*

*If this scenario includes tasks you perform, how does Kittyhawk/Franklin compare to the current method/tool you use? Kittyhawk/Franklin is. . .*

|                   |              |                       |               |                    |            |
|-------------------|--------------|-----------------------|---------------|--------------------|------------|
| <i>Much Worse</i> | <i>Worse</i> | <i>About the Same</i> | <i>Better</i> | <i>Much Better</i> | <i>N/A</i> |
| 1                 | 2            | 3                     | 4             | 5                  |            |

*Please explain.*

**Scenario 3: Copy and Paste Fragments from Franklin into a Kittyhawk Project***[this would stay as is]*

| # | Steps   | Expected Results                          |
|---|---|---|
| 1 | Log into Franklin.  |   |
| 2 | Click on the search button in left panel.<br>Give query parameters, and search for a list of Fragments. |   |
| 3 | Select several fragments. Click copy button.  | Copies fragment information to clipboard. |
| 4 | Open KittyHawk. Open an existing project, or create a new project.                                      |   |
| 5 | Click PASTE FROM FRANKLIN button.   | Creates a task for each fragment.         |

Scenario 3 Questions:

How satisfied are you with the Kittyhawk/Franklin process for completing this scenario?

|                   |              |         |           |                |
|-------------------|--------------|---------|-----------|----------------|
| Very Dissatisfied | Dissatisfied | Neutral | Satisfied | Very Satisfied |
| 1                 | 2            | 3       | 4         | 5              |

Please explain.

If this scenario includes tasks you perform, how does Kittyhawk/Franklin compare to the current method/tool you use? Kittyhawk/Franklin is. . .

|            |       |                |        |             |     |
|------------|-------|----------------|--------|-------------|-----|
| Much Worse | Worse | About the Same | Better | Much Better | N/A |
| 1          | 2     | 3              | 4      | 5           |     |

Please explain.

#### Scenario 4: Search and try to check out documents in Franklin [this would stay as is]

| # | Steps   | Expected Results   |
|---|---|--|
| 1 | Log into Franklin.  |  |
| 2 | Click on the search button in left panel.<br>Try out different combinations of search attributes, operators and values. Verify results. |  |
| 3 | Select a document in the Search results and try to check it out.  | Check out icon should be disabled.   |
| 4 | Select a document in the Search results and check out for view only.  | Document should appear in Right panel in Read only mode.                               |
| 5 | Try to check in document displays in right hand panel   | Check in icon should be disabled.  |
| 6 | Try to check out document displayed in right hand panel.  | You should not be able to check it out, as it has not been assigned in a task to you.. |
| 7 | Remove document displayed in the right hand panel from the Franklin Editor  |  |

#### Scenario 4 Questions:

How satisfied are you with the Kittyhawk/Franklin process for completing this scenario?

|                   |              |         |           |                |
|-------------------|--------------|---------|-----------|----------------|
| Very Dissatisfied | Dissatisfied | Neutral | Satisfied | Very Satisfied |
| 1                 | 2            | 3       | 4         | 5              |

Please explain.

If this scenario includes tasks you perform, how does Kittyhawk/Franklin compare to the current method/tool you use? Kittyhawk/Franklin is. . .

|            |       |                |        |             |     |
|------------|-------|----------------|--------|-------------|-----|
| Much Worse | Worse | About the Same | Better | Much Better | N/A |
| 1          | 2     | 3              | 4      | 5           |     |

Please explain.

### Scenario 5: Assign and Complete an "Edit" task and a "Publish" task for a Promotion

*[this would be replaced and incorporated into Scenario D because it's two separate tasks, and Scenario E because it's an Edit, not a Create]*

| #  | Steps   | Expected Results   |
|----|---|--|
| 1  | <p>KittyHawk Steps: Use Administrator Role</p> <ol style="list-style-type: none"> <li>1. Create a Request</li> <li>2. Create a Project and associate the request with it</li> <li>3. Initiate a task to EDIT a Promotion servable</li> <li>4. Click on SEARCH FRANKLIN button to get a fragment ID from Franklin</li> <li>5. ASSIGN the task to a Franklin Editor with Regular User role (yourself in this case)</li> <li>6. Send the task</li> <li>7. Save and close task</li> <li>8. Initiate a task to PUBLISH the same Promotion servable</li> <li>9. ASSIGN the task to a Franklin Editor (yourself so that you can complete the task - in reality you would assign it to a different person than the previous EDIT task)</li> <li>10. Close task without sending.</li> <li>11. Close the project</li> </ol> | <ol style="list-style-type: none"> <li>1. A new EDIT task with Status "Sent" should be in the task section</li> <li>2. A new PUBLISH task with Status "New" should be in the task section</li> <li>2. Check that the EDIT task is in the KittyHawk editor queue</li> </ol>   |
| 2  | <p>Franklin steps: Use regular Franklin User (Editor) role</p> <ol style="list-style-type: none"> <li>1. Launch the Franklin UI and Login</li> <li>2. Select Tasks -&gt; SHOW TASK INTERFACE, and view tasks assigned to you</li> <li>3. Start the task to check-out the Promotion.</li> <li>3. Edit the Promotion and check it in</li> <li>4. Select SHOW TASK INTERFACE to verify that task has disappeared.</li> </ol>   | <ol style="list-style-type: none"> <li>1. In Franklin, the Promotion appears highlighted in Active List.</li> <li>2. The Check-out, Approve and Publish icons should be disabled for the Promotion, as you have not been assigned the PUBLISH task at this point.</li> <li>3. Task should not appear in Task Interface anymore.</li> </ol> |
| 3  | <p>KittyHawk Steps: Use Administrator Role</p> <ol style="list-style-type: none"> <li>1. Open the project with previously assigned task.</li> <li>2. Click Refresh button above Task Section.</li> <li>3. Edit the PUBLISH task, send it, and close task.</li> </ol>  | <ol style="list-style-type: none"> <li>1. EDIT task should have Status "Comp".</li> <li>2. 'URL of work' field should NOT be filled for the EDIT task on the project form.</li> <li>3. Check that the EDIT task is no longer in the KITTYHAWK editor queue.</li> <li>4. PUBLISH task should have Status "Sent"</li> </ol>                  |
| 4. | <p>Franklin steps: Use regular Franklin User (Editor) role</p> <ol style="list-style-type: none"> <li>1. Select Tasks -&gt; SHOW TASK INTERFACE, and view tasks assigned to you</li> </ol>  | <ol style="list-style-type: none"> <li>1. Starting the PUBLISH task should launch the browser with links to all final pages to preview.</li> </ol>   |

|   |  |
|---|--|
| 2. Start PUBLISH task to begin approval of final pages.         |  |
| 3. Review all pages in the browser                              |  |
| 4. Publish the Promotion  |  |
| 5. Exit Franklin Editor   |  |
| 5. KittyHawk Steps: Use Administrator Role                      | 1. PUBLISH task should have Status "Comp".   |
| 1. Open the project with previously assigned task               | 2. 'URL of work' field should be filled in for the PUBLISH task on the project form. |
| 2. Verify that all tasks are complete                           | 3. Check that PUBLISH task is no longer in the KITTYHAWK editor queue.               |
| 3. Click on "Begin Final Approval"                              |  |
| 4. Copy and paste appropriate URLs of work to Request document. |  |

Scenario 5 Questions:

How satisfied are you with the Kittyhawk/Franklin process for completing this scenario?

|                   |              |         |           |                |
|-------------------|--------------|---------|-----------|----------------|
| Very Dissatisfied | Dissatisfied | Neutral | Satisfied | Very Satisfied |
| 1                 | 2            | 3       | 4         | 5              |

Please explain.

If this scenario includes tasks you perform, how does Kittyhawk/Franklin compare to the current method/tool you use? Kittyhawk/Franklin is . . .

|            |       |                |        |             |     |
|------------|-------|----------------|--------|-------------|-----|
| Much Worse | Worse | About the Same | Better | Much Better | N/A |
| 1          | 2     | 3              | 4      | 5           |     |

Please explain.



**Scenario 6: Assign a "Publish" Task, Create and Address Problem Report**  
*[we could include the creation of a problem report in the "publish" part for Scenario D or should we leave it as a separate scenario as is so that the scenarios are shorter and address fewer functionalities? What do you think?]*

Instead of creating an "Create" task for this one, assume that a product page has already been created.

| #  | Steps   | Expected Results   |
|----|---|--|
| 1  | <p>KittyHawk Steps: Use Administrator Role</p> <ol style="list-style-type: none"> <li>1. Open an existing project</li> <li>3. Initiate a task to PUBLISH a Product Page servable</li> <li>4. Click on SEARCH FRANKLIN button to get a fragment ID from Franklin</li> <li>4. ASSIGN the task to a Franklin Editor with Regular User role (yourself in this case)</li> <li>5. Send the task</li> <li>6. Save and close task, and project</li> </ol>   | <ol style="list-style-type: none"> <li>1. A new PUBLISH task with Status "Sent" should be in the task section</li> <li>2. Check that the task is in the KittyHawk editor queue</li> </ol>  |
| 2  | <p>Franklin steps: Use regular Franklin User (Editor) role</p> <ol style="list-style-type: none"> <li>1. Launch the Franklin UI and Login</li> <li>2. Select Tasks -&gt; SHOW TASK INTERFACE, and view tasks assigned to you</li> <li>3. Start PUBLISH task to begin approval of final pages.</li> <li>4. Review pages in the browser</li> <li>5. Create a problem report for the web document</li> <li>6. Double click on one of the product data elements in the table.</li> <li>7. Fill in the PROBLEM REPORT and send.</li> <li>8. Close the browser</li> <li>9. Remove Product Page with problem from your Active List</li> <li>10. Verify that the PUBLISH task still appears in our Task interface.</li> </ol> | <ol style="list-style-type: none"> <li>1. Starting the PUBLISH task should launch the browser with links to all final pages to preview.</li> <li>2. After clicking on "Create Problem Report", you should see the fragmentid and element name change in the browser status bar as you mouse over the different areas of the page.</li> <li>3. Double-clicking on an area should launch a Problem Report form to fill in.</li> <li>4. In KittyHawk, task should still appear as "Sent" as it was never completed due to problem.</li> </ol> |
| 3  | <p>KittyHawk Steps: Use Administrator Role</p> <ol style="list-style-type: none"> <li>1. Open the project with previously assigned task.</li> <li>2. View the Problem Report</li> <li>3. Assign a new "Edit and Publish" task with fragmentid from Problem Report (assign it to yourself) and the problem stated</li> </ol>   | <ol style="list-style-type: none"> <li>1. Problem Report should appear in the Project</li> </ol>   |
| 4. | <p>Franklin Steps: Use regular Franklin User (Editor) role to complete the "Edit and Publish" task as usual</p>   |  |

5. **KittyHawk Steps: Use Administrator Role**
  1. Refresh task list
  2. Note that "Edit and Publish" task is completed
  3. Edit the "Publish" task still uncompleted due to Problem Report
  4. Reclick on SEND to resend the task to the same editor (to notify him that problem has been corrected)
6. **Franklin Steps: Use regular Franklin User (Editor) role to complete the "Publish" task as usual.**
  1. When approving final pages, the cause of the Problem Report should be fixed.

**Scenario 6 Questions:**

*How satisfied are you with the Kittyhawk/Franklin process for completing this scenario?*

|                   |              |         |           |                |
|-------------------|--------------|---------|-----------|----------------|
| Very Dissatisfied | Dissatisfied | Neutral | Satisfied | Very Satisfied |
| 1                 | 2            | 3       | 4         | 5              |

*Please explain.*

*If this scenario includes tasks you perform, how does Kittyhawk/Franklin compare to the current method/tool you use? Kittyhawk/Franklin is. . .*

|            |       |                |        |             |     |
|------------|-------|----------------|--------|-------------|-----|
| Much Worse | Worse | About the Same | Better | Much Better | N/A |
| 1          | 2     | 3              | 4      | 5           |     |

*Please explain.*

## Scenario 7: Create a Superuser Activity Log and View Conflict Reports as Superuser

[this would stay as is also]

Change your Superuser flag to "Yes" in your KittyHawk User Profile

| #  | Steps   | Expected Results  |
|----|---|---|
| 1  | Open KittyHawk. Create a project.   |   |
| 2  | Assign several EDIT tasks associated with one Fragment ID.  |   |
| 3  | Assign all to regular Franklin role editors.  |   |
| 4  | Send Tasks, Save Project, and close KittyHawk.  |   |
| 5  | Franklin Steps as a Superuser:<br>1. Launch Franklin Editor<br>2. Select "File->Check out by Fragmentid" to check out the FragmentID that you assigned to other editors in Step 2<br>3. View tasks assigned to other editors for the document in the Conflict Report.<br>4. Click on "OK" to check out anyway<br>5. Edit the document<br>6. Check it in and view the Conflict Report again.<br>7. Click on "OK" to check in anyway. | 1. Conflict report should warn user of other active tasks on the same fragment.   |
| 6. | KittyHawk Steps: as Project Administrator<br>1. Open the project navigator.<br>2. Open the project.<br>3. Click on the doclink.   | 1. There is a lightning bolt icon in the view to indicate that there was 'superuser activity' on one of the tasks related to the project.<br>2. There is a doclink in the Superuser Activity field. The history on the project also indicates that there was superuser activity on the project.<br>3. The superuser activity log is opened. |
| 7  | As a regular editor, check out a fragment that is in a task not assigned to you.  | Not allowed because the user cannot see them.   |
| 8  | As a Superuser, check out a fragment that is not assigned in the other tasks.   | The fragment is checked out without any warnings.<br>The Conflict Report will not appear at check out or check in of this fragment until it is assigned to a task.  |
| 9  | Edit fragment and check it in.  | A superuser activity log is created in Kittyhawk.   |
| 10 | Repeat test by assigning tasks to other Franklin roles in KittyHawk: Image Editor, Fragment Editor.   |   |

**Scenario 7 Questions:**

How satisfied are you with the Kittyhawk/Franklin process for completing this scenario?

|                   |              |         |           |                |
|-------------------|--------------|---------|-----------|----------------|
| Very Dissatisfied | Dissatisfied | Neutral | Satisfied | Very Satisfied |
| 1                 | 2            | 3       | 4         | 5              |

Please explain.

If this scenario includes tasks you perform, how does Kittyhawk/Franklin compare to the current method/tool you use? Kittyhawk/Franklin is. . .

|            |       |                |        |             |     |
|------------|-------|----------------|--------|-------------|-----|
| Much Worse | Worse | About the Same | Better | Much Better | N/A |
| 1          | 2     | 3              | 4      | 5           |     |

Please explain.

Note that for Scenarios 8-9 you are playing the role of a Superuser. Before beginning, make sure your Franklin role is KittyHawk User profile is set to "Editor" and Superuser to "Yes."

For the pilot we are using 3 Enterprise Sites: Cargill, North Carolina, and Bayer. You must register to each one separately, with a different user name, because the registrations cannot be shared between different E-Sites. (If you choose to register only at one, make sure you publish content to that E-Site in the Scenarios below)

**Scenario 8: Register with the Enterprise Sites, publish and view a Product Comparison at an E-Site.**

[this scenario should come earlier, so that they register to Esites, maybe should be after Scenarios A and B, the first time they have to actually publish a servable page, not just a fragment. I think this should be changed to be A PROMOTION instead of Product Comparison because we already have a Product Comparison in Scenario D...]

| #  | Steps   | Expected Results  |
|----|---|---|
| 1  | E-Site registration steps:  | After logging on to one E-Site, your browser is set with a cookie for that particular E-Site. The cookie lasts for the current browser session. |
| 1. | To register, go to<br><a href="http://amadeus.sby.ibm.com/servlet/gold/NorthCarolina/Welcome">http://amadeus.sby.ibm.com/servlet/gold/NorthCarolina/Welcome</a> | To register or logon to a different E-Site, you need to launch a new browser and go to the URL of that site. The 3 E-Site URLs are:             |
| 2. | Click on "Register Now".  |   |

3. Follow instructions to register until you are brought back to the Login screen of the Enterprise Site you started from.

<http://amadeus.sby.ibm.com/servlet/gold/NorthCarolina/Welcome>  
<http://amadeus.sby.ibm.com/servlet/gold/Cargill/Welcome>  
<http://amadeus.sby.ibm.com/servlet/gold/Bayer/Welcome>

4. Enter the IBM ID and password you just created.

5. When prompted for the IBM authorization code, enter "nc100" (You will receive this code in an e-mail at some point, this gets you started faster)

6. On the home page of the E-Site, click on "Edit Personalization"

7. Select a Job Type and Check ALL available options (to ensure that regardless of interest area classification of a document, it will appear for you)

8. Click on "Submit", then click on "Return to your IBM home"

9. Note the different sections of the site: Home, Product, News, Solutions, etc.

10. Close the browser.

11. Launch a new browser and repeat steps

1-10 for the other 2 Enterprise Sites:

<http://amadeus.sby.ibm.com/servlet/gold/Cargill/Welcome>  
<http://amadeus.sby.ibm.com/servlet/gold/Bayer/Welcome>

## 2 Franklin steps:

1. Launch the Franklin UI and Login.

2. Create a Product Comparison. To ensure that you will see the document on the E-Site under your profile:

- enter START\_DATE as today or earlier to make the article appear immediately
- select one or more ENTERPRISE Sites you want it to appear under
- select the LOCATION, or the section of the site you want it to appear under
- select a few INTEREST\_AREAS
- do not select HOME\_FEATURE (it is not working for now)
- select the JOB\_TYPE you set in your E-Site profile or "All"

3. Search for Product Specs and Thumbnails and include one of each in the Product Comparison using Copy and Paste.

4. Create a new ThinkPad Product Spec (to include as the second product in the Product Comparison) and check it in.
5. Copy and Paste the new Product Spec from the Active List to the Product Comparison.
6. Preview the horizontal and vertical style sheets and select the one you prefer.
7. Check in the Product Comparison.

When trying to check in the Product Comparison, a dialogue should alert you that a subfragment has not been published.

8. Check out the unpublished subfragment using the small check out icon to the right of it in the Product Comparison.
9. Check the fragment back in, then publish it from the Active List.
10. Try to check in the Product Comparison again.

When trying to check in the Product Comparison, no dialogue should pop up this time.

11. Approve the final pages for the Product Comparison.
12. Publish the Product Comparison.

3. Enterprise Site steps:
  1. Logon to one of the E-sites where you published the Product Comparison.
  2. Go to the section you selected under Step 2 for LOCATION.
  3. Locate the Product Comparison and view the document.
4. Franklin steps:
  1. Search and check out the Product Comparison
  2. Change the LOCATION tag.
  3. Check in the Product Comparison.
  4. Publish the Product Comparison.
5. Enterprise Site steps:
  1. Go to the section that corresponds to the new LOCATION you specified in Step 4.
  2. Refresh the page in the browser.
  3. Locate the Product Comparison.
6. Franklin steps:
  1. Check out the Product Spec you created in Step 2.4.
  2. Edit the PRICE\_DOLLARS field.
  3. Check it in, and Publish.
7. Enterprise Site steps:
  1. Locate the Product Comparison.

Product Comparison should not appear under old LOCATION, and should now appear under new LOCATION. There may be a slight delay, so try a few times if you do not see the change immediately.

The republish of the Product Spec should have triggered the republish of the Product

2. Refresh the page.
3. Verify that it reflects the updated price.

Comparison. There may be a slight delay, so try a few times if you do not see the change immediately.

#### Scenario 8 Questions:

How satisfied are you with the Kittyhawk/Franklin process for completing this scenario?

|                   |              |         |           |                |
|-------------------|--------------|---------|-----------|----------------|
| Very Dissatisfied | Dissatisfied | Neutral | Satisfied | Very Satisfied |
| 1                 | 2            | 3       | 4         | 5              |

Please explain.

If this scenario includes tasks you perform, how does Kittyhawk/Franklin compare to the current method/tool you use? Kittyhawk/Franklin is. . .

|            |       |                |        |             |     |
|------------|-------|----------------|--------|-------------|-----|
| Much Worse | Worse | About the Same | Better | Much Better | N/A |
| 1          | 2     | 3              | 4      | 5           |     |

Please explain.

#### **Scenario 9: Verify the locking of documents in Franklin**

[this should stay as is]

Complete this scenario with a colleague, both of you as Superuser.

| # | Steps  | Expected Results   |
|---|--|--|
| 1 | Franklin steps:<br>User 1:<br>1. Launch Franklin Editor.<br>2. Search for a document of your choice.<br>3. Check it out. | Document appears in right hand panel.  |
| 2 | User 2:<br>1. Launch Franklin Editor.<br>2. Search for the same document as User 1 in Step 1.<br>3. Check it out.        | You should get a dialogue stating that the document is locked by User 1. Choose to check it out for "Read only". |
| 3 | User 1:<br>1. Remove the document from the right hand panel.   | Document is highlighted in Active List, but no longer checked out.   |

- |   |   |  |
|---|---|--|
| 4 | <i>User 2:<br/>1. Check out the document in the right hand<br/>panel.</i> | <i>You should not get the lock message, and<br/>document should check out.</i> |
| 5 | <i>User 1 &amp; 2:<br/>Exit Franklin Editor.</i>                          |  |



**Scenario 9 Questions:*****How satisfied are you with the Kittyhawk/Franklin process for completing this scenario?***

|                                 |                            |                       |                         |                              |
|---------------------------------|----------------------------|-----------------------|-------------------------|------------------------------|
| <b><i>Very Dissatisfied</i></b> | <b><i>Dissatisfied</i></b> | <b><i>Neutral</i></b> | <b><i>Satisfied</i></b> | <b><i>Very Satisfied</i></b> |
| <b><i>1</i></b>                 | <b><i>2</i></b>            | <b><i>3</i></b>       | <b><i>4</i></b>         | <b><i>5</i></b>              |

***Please explain.******If this scenario includes tasks you perform, how does Kittyhawk/Franklin compare to the current method/tool you use? Kittyhawk/Franklin is. . .***

|                          |                     |                              |                      |                           |                   |
|--------------------------|---------------------|------------------------------|----------------------|---------------------------|-------------------|
| <b><i>Much Worse</i></b> | <b><i>Worse</i></b> | <b><i>About the Same</i></b> | <b><i>Better</i></b> | <b><i>Much Better</i></b> | <b><i>N/A</i></b> |
| <b><i>1</i></b>          | <b><i>2</i></b>     | <b><i>3</i></b>              | <b><i>4</i></b>      | <b><i>5</i></b>           |                   |

***Please explain.***

| Current State                                   |          |         |          | Action |         |       |        | Return   |         |  |  | Next State |  |  |  |
|---|----------|---------|----------|--------|---------|-------|--------|----------|---------|--|--|------------|--|--|--|
| TaskID  | IsCommit | IsDraft | Method   | TaskID | AsDraft | value | TaskID | IsCommit | IsDraft |  |  |            |  |  |  |
| Create a new draft                              |          |         |          |        |         |       |        |          |         |  |  |            |  |  |  |
| Null  |          |         | Create   | Xxx    | 1       | True  | Xxx    | 1        | 1       |  |  |            |  |  |  |
| Create a new fragment by checkin                |          |         |          |        |         |       |        |          |         |  |  |            |  |  |  |
| null  |          |         | Create   | Xxx    | 0       | True  | Xxx    | 0        | 0       |  |  |            |  |  |  |
| Update a draft with a draft                     |          |         |          |        |         |       |        |          |         |  |  |            |  |  |  |
| Xxx   | 1        | 1       | Update   | Yyy    | 1       | True  | Yyy    | 1        | 1       |  |  |            |  |  |  |
| Update a draft with a checkin                   |          |         |          |        |         |       |        |          |         |  |  |            |  |  |  |
| Xxx   | 1        | 1       | Update   | Yyy    | 0       | True  | Xxx    | 9        | 1       |  |  |            |  |  |  |
|   |          |         |          |        |         |       |        |          |         |  |  |            |  |  |  |
| Update a checked-in fragment with a draft       |          |         |          |        |         |       |        |          |         |  |  |            |  |  |  |
| Xxx   | 1        | 0       |          |        |         |       | null   | 1        | 1       |  |  |            |  |  |  |
| Update a checked-in fragment with another draft |          |         |          |        |         |       |        |          |         |  |  |            |  |  |  |
| Xxx   | 1        | 0       |          |        |         |       | Xxx    | 9        | 0       |  |  |            |  |  |  |
|   |          |         |          |        |         |       |        |          |         |  |  |            |  |  |  |
| Commit a newly checked-in fragment              |          |         |          |        |         |       |        |          |         |  |  |            |  |  |  |
| Xxx   | 0        | 0       |          |        |         |       | null   | 1        | 0       |  |  |            |  |  |  |
| Rollback a newly checked-in fragment            |          |         |          |        |         |       |        |          |         |  |  |            |  |  |  |
| Xxx   | 0        | 0       |          |        |         |       | null   |          |         |  |  |            |  |  |  |
| Commit an updated fragment                      |          |         |          |        |         |       |        |          |         |  |  |            |  |  |  |
| Xxx   | 9        | 0       |          |        |         |       | null   | 1        | 0       |  |  |            |  |  |  |
| Yyy   | 0        | 0       |          |        |         |       |        |          |         |  |  |            |  |  |  |
| Rollback an updated fragment                    |          |         |          |        |         |       |        |          |         |  |  |            |  |  |  |
| Xxx   | 9        | 0       | Rollback |        |         | Yyy   | null   | 1        | 0       |  |  |            |  |  |  |
| Yyy   | 0        | 0       |          |        |         |       |        |          |         |  |  |            |  |  |  |
| Commit a checked-in never committed fragment    |          |         |          |        |         |       |        |          |         |  |  |            |  |  |  |
| Xxx   | 9        | 1       | Commit   |        |         | Yyy   | null   | 1        | 0       |  |  |            |  |  |  |
| Yyy   | 0        | 1       |          |        |         |       |        |          |         |  |  |            |  |  |  |

[illegible]

## How to Install Franklin Editor

1. Create a **franklin** directory in a location of your choice on your hard drive. These instructions assume you create **C:\franklin\**
2. Download the self-extracting **FranklinEditor** from <http://monolith.adtech.internet.ibm.com/franklin/downloads/FranklinEditor.exe>. Save the file to a temporary directory on your hard drive.
3. Double-click on **FranklinEditor.exe** in the temp directory on your hard drive. This will start the WinZip Self-Extractor. Under "Unzip to folder" enter **C:\franklin\** or the path to the franklin directory you created in Step 1. Click on "Unzip".
4. Go to **C:\franklin\FranklinEditor** on your hard drive. Open **franklin.properties** file in NotePad. If the location of your browser is different from the one listed, remove the # in front of **browserPath** and change the value to the appropriate path on your machine. Save and close the file.
5. Double-click on **C:\franklin\FranklinEditor\FranklinEditor.bat** or **or.bat** file. The login screen will pop up and prompt for your username and password. Enter the username and password that your team has provided to you.

## How to Dele

1. Simply delete the drive.

## How to Get Started with Franklin Editor

After installing the Editor by following the [How To Install](#) instructions and logging in, you can take the actions listed below. When Franklin runs integrated with the KittyHawk workflow engine, a user can work in one of two modes: **superuser** or **regular user**.

Note:

All icons in the Editor UI display a tooltip if you mouse over the icon.


Useful error messages appear in the status bar at the bottom of the Editor UI.

### ACTIONS FOR SUPERUSER

#### Search

Click on the "Search" icon above the Active List. This brings up the Search UI. Select attributes and values from the drop down menus. You can add more search conditions using the +/- widget. Click on "Submit" to launch the search.

Hint: A search that will always bring back results is "Page Type is Fragment"

Once search results are displayed in the table, you can select one or more of them and merge them into the Active List in the Editor UI by clicking on the "Merge with Active List" icon 

#### Check Out for Edit

Select an item in the Active List and click on the "Checkout selected document" icon. If the document is not locked by another user, it will appear in the right-hand pane in editable widgets. You can modify any fields and resubmit into Franklin server. See "Check in"

#### Check Out for View

Select an item in the Active List and click on the "View selected document in read only mode" icon. It will be displayed in the right-hand page in editable widgets. However, you will not be able to check-it in with any changes. You can click on the "Check out" icon above the right-hand pane to check it out for edit.

#### Create New Fragment



Click on the "Create new document" icon. This brings up the list of fragments and pages you are allowed to create. Select a fragment, click on "Create". The Editor UI retrieves the correspondig DTD from the server and auto-generates the right-hand pane with widgets. The required fields are highlighted in yellow, and must be filled in before you are allowed to check in the document.

#### Create a New Page

Create a page the same way you create a fragment. However, note that a page has additional fields that

enable it to be turned into a final HTML page and previewed:

**A page includes one or more subfragments.** To include a subfragment into a page under construction, do the following:

- Search for all subfragments of the appropriate document type (see Search), and merge them into your Active List
- Select the subfragment you wish to include from the Active List
- Click on the "Copy" icon above the Active List 
- Click on the subfragment field in the page under construction
- Click on the "Paste" icon above the right hand pane.  This will write the fragment ID of the pasted fragment into the field.

**A page requires "PublishInfo" to be filled in.** You must select a publish directory on the server. This is where the final page will be saved. You must also enter the final HTML file name for the published page. You must also select a style sheet to render the page in HTML.

See "Preview" to view the final HTML page.

### Check in

Once you have created a new document or modified an existing one, click on the "Check in document" above the right-hand pane. The document will be validated against the DTD and sent to the Franklin server. You can now search for it to check it out again for modifications.

### Preview a Page

Before checking in a page, you can preview it by clicking on the "Preview page" icon above the right-hand pane. It will launch the browser you specified in the *franklin.properties* file during installation. The browser will display the output HTML generated using the style sheet listed in the *first* PUBLISHINFO of the page. To see all output pages, you need to check-in the page and then click on the "Approve" icon.

Note that you can make further changes to the page and preview it again before checking it into the server. You can also preview any page (but not a fragment) by selecting it from the Active List and clicking on the "Preview page" button above the Active List.

### Approve document

To approve the publishing of a fragment or a servable, select it in the Active List and click on the "Approve final pages for selected document" icon. This will launch a browser and display a list of all resulting HTML pages. For a fragment, the list consists of all final HTML pages of all the servables that include the fragment as a subfragment. For a servable, the list consists of all final HTML pages of that servable.

### Create problem report

If you find a problem with a final page, create the appropriate problem report by clicking on the "Create

problem report" icon.

### **Publish document**

If you find no problems with any of the final pages you are approving, click on the "Publish document" icon above the Active List. The selected document will be published to the server.

### **Remove current document**

While editing a document in the right-hand pane, you can click on the "Remove current document" icon. This will unlock the document on the server and discard the document being edited from the Editor UI.

## **ACTIONS FOR REGULAR USER**

### **Get Task List**

Select "Tasks -> Show Task Interface" from the menu bar to retrieve current tasks assigned to you in the workflow engine.

### **Update Task List**

To refresh the entries in the Task Dialogue, click on the "Update task list" icon. Note that after you first launch the Task Dialogue the tasks do not get automatically updated. You have to explicitly ask for the list to be updated.

### **Initiate Task**

To begin working on an assigned task, select the task and click on the "Initiate selected task" icon. A Create task will open a new document template to fill in, an Edit task will check out an existing document, and a Publish task will launch a browser to approve pages to be published. Once you check-in or publish the document initiated by a task, the task will disappear from the task dialogue.

### **View task info**

To view task associated with a document in the Active List or in the right hand panel, click on the "View task associated with selected document" icon. It will bring up the Task Dialogue with the appropriate task selected. Note that this icon is only enabled for documents that are associated with a task.

The other actions you will be able to take in the Franklin Editor UI as a regular editor are described above in the [superuser section](#). Allowed actions will be identified by the icons being highlighted.

---

# Franklin User Acceptance Testing

*Participant Feedback Analyzed for the Franklin Team by*

*Roger Tilson*

*IBM Ease of Use Architecture and Design*

*July 17, 2000*

E



|  |    |
|--|----|
| Executive Summary .....  | 2  |
| Recommendations .....  | 3  |
| Cavea2ts .....   | 5  |
| Participants .....   | 5  |
| Findings .....   | 5  |
| Overall satisfaction .....                                       | 6  |
| Getting started .....  | 6  |
| Ease of using once learned .....                                 | 7  |
| Comparison with other tools .....                                | 7  |
| Task efficiency .....  | 8  |
| Franklin advantages .....  | 8  |
| Franklin disadvantages .....                                     | 8  |
| Would you want to use Franklin or<br>similar process/tool? ..... | 9  |
| What would you most like to change? .....                        | 9  |
| Scenario 2 .....   | 10 |
| Scenario 3 .....   | 10 |
| Scenario 4 .....   | 11 |
| Scenario 5 .....   | 12 |
| Scenario 6 .....   | 12 |
| Scenario 7 .....   | 13 |
| Scenario 8 .....   | 14 |
| Scenario 9 .....   | 14 |
| Discussion .....   | 14 |

## Executive Summary

*Participants generally liked the functionality that Franklin provided, and they were generally satisfied with the tool overall. Participants liked that Franklin*

- ♦ *Publishes data in as many different formats as desired*
- ♦ *Solves the problem of data maintenance on the Web*
- ♦ *Stores product data in XML*
- ♦ *Provides the ability to publish content without help from developers*
- ♦ *Provides the ability to change content once and have the changes appear in multiple places*
- ♦ *Provides the ability to convert product data to non-Web platforms*
- ♦ *Provides the ability to preview*
- ♦ *Allows sharing of fragments*
- ♦ *Provides better organization of content/data via standardization*
- ♦ *Allows the user to click around the site and easily change the page*
- ♦ *Allows the user to retrieve documents based on URL*

*In addition to these generally positive comments, participants noted areas for improvement. In particular, participants expressed dislike for the current UI, or what they called “getting around” in it. They recommended, either explicitly or implicitly, several minor changes, such as right-click options, double clicking to open/checkout documents, keyboard shortcuts for copy and paste, a more conspicuous icon for the search interface, and a way to sort lists of items in the search interface by clicking on headers. They also recommended or implied that some major changes would be valuable. Specifically, participants suggested enabling users to browse the Web and identify/select servables and fragments for editing, and creating a browsable library (distinct from the search interface) of fragments and servables that also enables previewing.*

*The Franklin team needs to implement the minor changes participants recommended, and also consider some of the major changes. The magnitude of the UI design changes the team undertakes will likely depend upon the goals/requirements for Franklin. If the goal is for users to be as efficient as they can be using Franklin, and to learn it as quickly as possible, then the Franklin team needs to gather more user input to determine the optimal UI design for interacting with servables and fragments. If the goal is only for users to be more efficient than they are currently, then several minor changes to the UI will likely suffice. The usability goals for Franklin will dictate whether more user input and major design changes are necessary.*

## Recommendations

*The most important recommendation involves completing a design walkthrough. The specific recommendations for improving the UI appear in two categories, one for major design changes, and one for minor changes.*

### *Complete a design walkthrough or head-to-head comparison*

*If the goal is for users of Franklin to be as efficient as they can be, then the Franklin team needs to complete a design walkthrough showing users different possible designs for finding and working with servables and fragments. Among these different possible designs would be those of the competition. The main goal of the walk through is to determine which design(s) works best. Other goals are to determine if there is a reason or advantage in continuing to develop a new product, what those*

advantages are, and whether the new product being considered needs changes to the conceptual design. The different designs used can be paper sketches, screen mockups, or a fully functional tool like Franklin is currently. Whichever they are, participants “walk through” accomplishing particular tasks. See the UCD site for more information on design walkthroughs ([w3.ibm.com/ucd](http://w3.ibm.com/ucd)).

Consider the following major UI changes:

- ♦ Additional views (e.g. tree diagrams, or other mechanisms determined by user input) for finding, checking out, and previewing fragments and servables
- ♦ A feature that allows users to browse the site and find the page/fragment they want, and then select and open it from the browser to edit it
- ♦ A mechanism allowing users to organize servables and fragments according to their needs
- ♦ A preview function in the search interface so users can determine if a fragment or servable is the one they want (perhaps previewing the selected fragment or servable in a right pane while the left shows the list of fragments or servables)

Make as many of the following UI changes as time and resources permit:

- Provide a short tutorial explaining how to get started using Franklin
- Give default focus to the user name field of the Franklin logon interface (also enable keyboard use to logon)
- Provide easy-to-understand labels for fields in templates
- When possible, change to standard Lotus or Microsoft icons, or icons that users are more familiar with
- Use text labels with all icons or those icons that may be unfamiliar
- Make it more obvious that the search button is active when Franklin first launches
- Enable use of keyboard for all functionality, especially copying and pasting fragments
- When users access the directory, open to the location users were last viewing
- When the Franklin window is resized, adjust the size of option and entry fields so that the entire UI fits into the window; establish a minimum size for entry fields, at which point horizontal scrolling is required
- Do not close the draft when users click save as draft (not sure what all users expect save as draft to do, but one person recommended this, use extra discretion here)
- Provide messages that not only tell users there is a problem, but tell users how to solve the problem
- Provide messages to indicate why preview will not work in some situations
- Provide localized help to explain the function of specific fields in templates, or a prominent link to a page showing examples of how the data is used
- Indicate for all fields what information is and/or is not necessary (e.g. whether adding a \$ sign is necessary in price fields, and whether adding the abbreviation MB is necessary for memory fields)
- Indicate beside the name fields that users need to add file extensions such as .jpeg or .gif
- Add right-click functionality, such as for copying and pasting fragments, or checking out fragments and servables
- Enable users to sort search results by creator, dates, etc., by clicking on the metadata headings
- Ensure user ids and logins aren't case sensitive, and that users get the same search results when they type roger tilson or Roger Tilson as the creator
- To check out fragments, allow users to type names in addition to copying and pasting them

- *Facilitate double-clicking to open/checkout documents and create new ones*
- *Provide more cues in the search interface as to the status of use of fragments and servables: are they currently checked out, and are they currently published on the site*
- *Provide a way to publish to multiple servers*

## Caveats

*This user input will be most valuable as a means to improve the UI and functionality rather than as an assessment of the value of Franklin. It will not be very useful as an assessment of the value of Franklin for the following reasons:*

- ◆ *At least two participants thought Franklin was for product data only, which caused them to rate Franklin lower on key scales*
- ◆ *One participant did not realize that Franklin was intended to be used as part of a workflow process, and that they did not use this aspect of the product*
- ◆ *The esites meta data was complex and foreign to this different group of users, which made the tasks difficult to complete*
- ◆ *Participants reported that sometimes the instructions were not clear or contained irrelevant information, and most could not complete task 8 because the document was not checked out as was intended*

*If the Franklin team still wants a proof-of-concept user evaluation, then Franklin will need to be customized to meet the specific needs of the user group that performs the evaluation. The scripts will also need to be pilot tested, since some of the instructions were inaccurate.*

## Participants

*Four out of six of the participants currently create or maintain content for Web sites. The other two participants are involved in determining which tool(s) the TG group will use to create and manage Web content.*

## Findings

*Participants liked the functionality that Franklin provided. Specifically, they liked that it:*

- ◆ *Publishes data in as many different formats as desired*
- ◆ *Solves the problem of data maintenance on the Web*
- ◆ *Stores product data in XML*
- ◆ *Provides the ability to publish content without help from developers*
- ◆ *Provides the ability to change content once and have the changes appear in multiple places*
- ◆ *Provides the ability to convert product data to non-Web platforms*
- ◆ *Provides the ability to preview*
- ◆ *Allows sharing of fragments (with other content providers? Or documents? Or both?)*
- ◆ *Provides better organization content/data via standardization*
- ◆ *Allows the user to click around the site and easily change the page*
- ◆ *Allows the user to retrieve documents based on URL*

*Below are the ratings for three of the post-test questions, and the comments of the participants:*

## Overall satisfaction

How satisfied are you overall with the Franklin process for completing these scenarios?

Very Dissatisfied      Dissatisfied      Neutral      Satisfied      Very Satisfied

1

4

Mean Avg: 3.8 (Between Neutral and Satisfied)

Lynn (Neutral): I liked the way it captured the data and how that data could be used anywhere in as many different formats as someone wanted. Getting around the tool was difficult.

Michelle (Satisfied): I believe that Franklin is a good tool to complete a lot of the content management tasks. However, the main comment I have is that the instructions for the test are not clear, making it difficult for me to evaluate Franklin. The 30min orientation (given the down times) gives only a cursory view of the tool. I would be able to give better feedback if I understand it more.

Dave (Satisfied): Although not impressed in comparison to our other tools, Franklin is a good product. It gets the job done, is fairly easy to use after being trained and learning how the UI works, and solves a legitimate problem with data maintenance on the Web.

### Getting started

How easy or difficult was it to get started using Franklin?

Very Difficult      Difficult      Neither Difficult      Easy      Very Easy  
Nor Easy

1

1

3

Mean Avg: 3.4 (Between Neither/Nor and Easy)

Lynn (Neither/Nor): When the login screen appears, the top text box should have a set focus on it.

Patty (Easy): The hardest part was understanding the meta data for the e-sites.

Phyllis (Difficult): I did not know about the icons to the right of the screen (i.e. check out subfragment or add fields).

I did not know that fragments or subfragments had to be 'merged' onto the active list in order to use them.

Dave (Easy): It is not a difficult tool. There were frustrations at the beginning, however. For example, wanting to close the current document, and not finding where the close button was. (Closing the entire application instead.) Also, Copy and Paste did not seem to work, and other functions that are normally taken for granted in any production application.

### Do you think Franklin needs to be easier to get started using?

Lynn: Yes. There could be a tutorial provided.

Patty: No

Phyllis: Yes

Michelle: Yes, An average user may not be well versed in "common" software navigation. Need more comprehensive training before use and continued support during use. Would be useful to have a help manual (local and Web).

Dave: Yes. Things as simple as using standard icons for close, copy, paste, etc. would be a great help. Although the tool is not hard to learn, the questions are screaming in my mind of why the programmers made up their own icons for copy/paste, among other things?

### **Ease of using once learned**

How easy or difficult was using Franklin once you had learned how it worked?

|                |           |                               |      |           |
|----------------|-----------|-------------------------------|------|-----------|
| Very Difficult | Difficult | Neither Difficult<br>Nor Easy | Easy | Very Easy |
|                |           |                               | 2    | 2         |

Mean Avg: 4.5 (Between Easy and Very Easy)

Phyllis (Very Easy): The tool was easy to use after I had received help from Dikran. In the future, the eMeeting should be allotted more time to ensure that the introduction may be completed.

Michelle (Easy): Once you understand how it works, it's easy though there are little quirks here and there.

Dave (Easy): As mentioned, the initial learning curve is quick, then the tool is easy to work with. The exception to this is the product page form, which is way too complex for the average user.

### **Comparison with other tools**

How does Franklin compare to the current method/tool you use to manage the content of Web sites? Franklin is. . .

|               |       |                   |        |             |     |
|---------------|-------|-------------------|--------|-------------|-----|
| Much<br>Worse | Worse | About the<br>Same | Better | Much Better | N/A |
|               | 2     |                   |        |             | 3   |

Mean Avg: 2 (Worse)

Lynn (Worse): Worse than our new tool. We would have to set up extensive training on the Franklin tool and then dedicate resources to be a pseudo help desk.

Dave (Worse): Although Franklin has some added features, it is missing many more. It seems to be more a tool to just manage the XML for product data than for true content management. Also, the UI features need quite a bit of work to make the tool workable for most users. If Franklin could be integrated as a part of a complete content management system, it would add a good deal of value.

### **Task efficiency**

Tasks users can complete more efficiently using Franklin:

Lynn: Viewing data under different environments, Storage of XML data

Phyllis: The ability to publish content without help from developers  
The ability to change content once even though it is located in multiple places

Dave: Product Spec sheets, conversion of product data to non-Web platforms

Tasks users can complete more efficiently using other tools:

Lynn: Our tasks are easier to perform. Our new tool will have the ability to modify non-product data.

Phyllis: None

In general, would Franklin allow you to complete your tasks more efficiently :

Lynn: Franklin would allow our team to perform a fraction of our tasks more efficiently. We still have the overview page, news, support, press releases and a few other templates.

Phyllis: Yes. It will reduce the need for help from developers. Content will, consequently, be updated or modified more frequently.

Dave: No. Most of IBM does not have a robust content management tool, and would get great value from Franklin. However, PSD has a tool already, and is developing the next generation of that tool. The ideal solution would be to integrate the strengths of Franklin with the rest of their tool.

**Franklin advantages**

Lynn: Good way to store XML data.

Patty: The ability to edit Fragments and their meta data. Also, the ability to preview.

Phyllis: The ease of publishing content.

Michelle: Self-service tool for content providers.

Allows sharing of fragments.

Better organization of pages/content via standardization.

Dave: Storage of Product data in XML, available to both Web and non-Web platforms from the same data source.

**Franklin disadvantages**

Lynn: It seems to be limited in entering data only for products. How does an administrator create new style sheets or adjust current ones?

The UI needs some work, but we were told not to take that into consideration (a little hard since we are trying to use the tool).

Patty: The user interface needs some improvement, i.e. Colors, help features...Would also like to be able to copy an existing fragment/servable and customize to new content.

Phyllis: Franklin does not have workflow capabilities.

Michelle: The UI is not very friendly. Need to provide extensive training to users.

Conversely, the "better organization" of content also means that there is lesser flexibility.

*Dave: Lack of UI. It is not intuitive to use, and therefore requires support and customization for any group that wants to use it. The fact that Franklin is already being used, yet we are going through this exercise to evaluate it for TG, is a perfect example of its need to be improved in UI and flexibility.*

### **Would you want to use Franklin or similar process/tool?**

*Lynn: Yes*

*Patty: Yes. However, I am concerned about our content providers. They currently use a home grown interface that does not require them to fill in meta-data. Perhaps (just brainstorming) we'd need a layer on top of this for those who want to provide content but just use the existing meta data values and therefore don't even show them.*

*Phyllis: Yes. At this point there is a lengthy turnaround time for content changes since developers are given the task of loading content as opposed to content managers/authors.*

*Michelle: Yes*

*Dave: Yes. Franklin is definitely on the right track. And mentioned previously, if integrated with a more complete content solution, it would be a valuable tool.*

### **What would you most like to change?**

*Lynn: The user interface needs to be a little bit more helpful. I would also like to have seen the administrator's pt of view. How does a team create new style sheets?*

*Patty: I know we didn't use the workflow part, but I'd like to be able to have a baseline for content, so when updates are made the reviewer can see what exactly has changed without reading the entire piece of content.*

*Michelle: Friendlier UI. Better navigation.*

*Dave: User Interface*



**Scenario 2**

|                      |              |         |           |                   |
|----------------------|--------------|---------|-----------|-------------------|
| Very<br>Dissatisfied | Dissatisfied | Neutral | Satisfied | Very<br>Satisfied |
|----------------------|--------------|---------|-----------|-------------------|

1

5

Mean Avg: 3.83

**Comments:**

**Carl (Neutral):** With or without a content management tool, what we need is a well-ordered, well-maintained, user-friendly image library, and when new images are created we need content owners to put them into the library. Adopting Franklin (or any other tool) will not automatically cause this to happen.

**Lynn (Satisfied):** It allowed me to complete the task. "Content" field should be above "Content FileName". When a user browses for an image, they can find it in the local directory then the file name just appears in the "Content" field. When browsing for the image, if the user selects one, and it is wrong, they have to browse for it again. When they hit that button to browse, the directory is not where the user last looked, it is in the Franklin Tool directory. I think it should remember where the user looked last.

**Patty (Satisfied):** Don't think that I, the user, should have to check for duplicate name before creating the image. Also, please provide some filename help...i.e. Naming guidelines.

**Phyllis (Satisfied):** I was pleased with the tool AFTER I had help from Dikran. For example, in the CONTENTFILENAME field I did not know to add a file extension (i.e. jpg) from the error message 'could not map filename null'. A suggestion for tool improvement is to allow double-clicking on fields. For example, upon creating a fragment or page, I was hoping to double-click on the fragment type to create it. Instead I am forced to click on the CREATE button on the bottom.

**Michelle (Satisfied):** Easy to use. Would be great if Franklin can "remember" where I last pulled my files from. "Content File Name" - why can't this be pulled from the file name of the gif/jpg automatically?

**Dave (Satisfied):** The form for submitting images is fairly simple and straightforward. It is easy to work with, and being able to view the directory structure on the server is a nice touch. However, the UI is not intuitive, and needs work.

**Scenario 3**

|                      |              |         |           |                   |
|----------------------|--------------|---------|-----------|-------------------|
| Very<br>Dissatisfied | Dissatisfied | Neutral | Satisfied | Very<br>Satisfied |
|----------------------|--------------|---------|-----------|-------------------|

2

3

1

Mean Avg: 2.83 (Between Dissatisfied and Neutral)

**Comments:**

*Carl (Dissatisfied): First: I couldn't figure out how to get out of "Thumbnail" mode, so I had to shut down Franklin and restart it.*

*Second: I had to re-edit franklin.properties before it would preview the file. The requirement to configure franklin.properties will be a huge barrier to most of our prospective content "owners" because by and large they are not technical people. With content coming from many people in many locations, I see this as a significant barrier to its successful widespread adoption. Rather than bottom-line content "owners" uploading content, we will likely end up with a few people on the web team doing it.*

*Third: The Scenario instructions ask you to "refresh tasks assigned to you". I never did figure out how to find out what tasks were "assigned to me". I finally ignored this instruction.*

*Fourth: When I edited the product page and saved it as a draft, my edits disappeared from the fields on the right side of Franklin and the downlevel version reappeared. This is very counter-intuitive. Keeping the downlevel version is great, but when you save your edits you should continue to see the new version. Each time I checked the document in, my edits would disappear and the downlevel version would reappear.*

*Fifth: When I checked out the product page, and then did a search, the version I checked out did not appear in the search results. It should appear, with a notation that it has been checked out.*

*Lynn (Neutral): I'm assuming it is a product specialist involved with the creation.*

*Patty (Neutral): Insufficient help with error messages.*

*Michelle (Neutral): Navigation is difficult especially between search window and main window. "Right click" functions would help.*

*The instructions are not clear. Some steps don't seem relevant.*

*Would be very helpful if each meta data has a detail/brief description. Maybe this is not so bad for someone who knows the product well. I am not well versed, so I have difficulty.*

*Got an error message - "Automation server cannot create object." after Step #18. Dikran said it's a security problem.*

*Dave (Dissatisfied): The form is too complex for end users. The people who write the content for product pages are not technical. Based on our experiences with the first generation of our content management tool, if the forms are too complex, even with training, the system just won't get used. The process of filling out the form and submitting is fine, but the form needs to be simplified, and the terminology on each field has to be written in English, not the field names that make sense to the system programmers.*

#### Scenario 4

| Very<br>Dissatisfied                          | Dissatisfied | Neutral | Satisfied | Very<br>Satisfied |
|---|--------------|---------|-----------|-------------------|
|   |              | 3       | 2         |                   |
| Mean Avg: 3.4 (Between Neutral and Satisfied) |              |         |           |                   |

Comments:

*Lynn (Neutral): The tool wasn't checking in at all. I tried to modify all the fields and they didn't work until I cut out the registered symbol in the summary. Then it checked-in fine. The exact error was, "an error parsing input stream".*

*Phyllis (Neutral): After I had checked the page in I had gotten the message 'can not preview this page'. Does this have something to do with the style sheet for PDA?*

*Michelle (Neutral): Instructions not clear. Followed instructions but the PDA link did not show up at the "approval pages" stage. Dikran tried it and the PDA link showed up on his pc.*

*Dave (Satisfied): The process works, and if the page is already created, the form does not seem as daunting as when creating a page from scratch. However, had I not already been shown how to add the PDA style sheets, I would have had trouble figuring it out on my own, and the style sheets/layout are not visually separated from the rest of the fields on the form.*

### Scenario 5

| Very<br>Dissatisfied | Dissatisfied | Neutral | Satisfied | Very<br>Satisfied |
|----------------------|--------------|---------|-----------|-------------------|
|                      |              | 2       | 2         | 1                 |

Mean Avg: 3.8 (Between Neutral and Satisfied)

#### Comments:

*Lynn (Satisfied): The general thought of capturing data like this is great. The UI is a problem. Assuming the person entering in the info is a product specialist, it still doesn't specify whether MB should be entered for memory or just a number.*

*Phyllis: (Neutral) I had tried to preview my fragment but every time I had clicked on the preview icon nothing happened.*

*Michelle (Neutral): No explanation of each meta data. A product specialist might know but I am not well versed. Had some difficulties understand the fields required.*

*Dave (Satisfied): Again, aside from UI complaints, the tool does the job intended.*

### Scenario 6

| Very<br>Dissatisfied | Dissatisfied | Neutral | Satisfied | Very<br>Satisfied |
|----------------------|--------------|---------|-----------|-------------------|
|                      |              | 1       | 4         |                   |

Mean Avg: 3.8 (Between Neutral and Satisfied)

#### Comments:

*Lynn (Satisfied): I think the purpose behind it is great. The product is good at enabling the user to complete this scenario. But w/o directions, I would have been lost. I used product specs created by other people that were already published. I didn't understand why they needed to be checked-in/published again for my task.*

*Phyllis (Satisfied): The tool is excellent. I just had difficulty adding a product spec since my screen did not display the '+' sign to the right of the field. Without asking Dikran, I would not have known to scroll to the right of the screen to click on the '+' sign.*

*Michelle (Neutral): Suggest that the "price" meta data field indicate that the "\$" is default. If not, end up with values like "\$\$3500".*

*My thumbnail did not show up. Dikran explained that it is in the index page and not product comparison page.*

*My Product Comparison page did not show up. The page also did not show up in the search function. Recreated the pages twice using different names (replaced "&" with "\_" because of XML). Still did not show up. "The requested URL/web/ProdCompA&T.html was not found on this server."*

*"Caps" or "no caps" for user name/creator field. I logged on Friday under "Michelle Lim". I logged on Monday under "michelle lim". When I do searches by creator, I get different results when I use "Michelle Lim" and "michelle lim". It's confusing.*

#### **Scenario 7**

| Very<br>Dissatisfied | Dissatisfied | Neutral | Satisfied | Very<br>Satisfied |
|----------------------|--------------|---------|-----------|-------------------|
|                      |              |         | 3         | 2                 |

*Mean Avg: 4.4 (Between Satisfied and Very Satisfied)*

#### **Comments:**

*Lynn (Satisfied): Allows the user to click around the site and easily change the page.*

*Patty (Very Satisfied): I'm extremely impressed with the functionality to retrieve based on URL.*

*Phyllis (Satisfied): This functionality is excellent. The only difficulty I had encountered was checking out the subfragment. I did not see the icon to the right of the product spec field. I kept copying the fragment id of the subfragment and going to 'FILE CHECK OUT WITH FRAGMENT ID', which did not change the right-side of the screen.*

*Michelle (Very Satisfied): This part is easy. =)*

#### **Scenario 8**

| Very | Dissatisfied | Neutral | Satisfied | Very |
|------|--------------|---------|-----------|------|
|------|--------------|---------|-----------|------|

Dissatisfied

Satisfied

| |

Comments:

Lynn (Dissatisfied): I couldn't just type the id in the field. I had no conflict report or it wasn't apparent as to where it was.

Phyllis: I could not type the fragmentid into the appropriate field. I did not receive an error message stating that another was using the field either. Hence, I could not complete this task.

Michelle (Neutral): The check out by fragment ID window.... only accepts a cut and paste of the ID. Does not allow direct entry into the box.  
Did not get a message that the fragment is locked but a conflict report did come up. However, was not given the option to click "OK" and check out anyway (Step #4). Could not evaluate.

Dave: N/A – There were no tasks in the system, so this scenario did not function as the test described

Scenario 9

|                      |              |         |           |                   |
|----------------------|--------------|---------|-----------|-------------------|
| Very<br>Dissatisfied | Dissatisfied | Neutral | Satisfied | Very<br>Satisfied |
|----------------------|--------------|---------|-----------|-------------------|

|

Comments:

Lynn: I had no one to work with on this.

Phyllis: There were no colleagues to test this with. Hence, I did not complete this scenario.

Michelle: Could not evaluate with another user.

Dave: N/A – I was working alone, so could not test with another user.

Discussion

The Franklin team may want to establish short-term and long-term goals for the Franklin content management system. In the short-term, the team could provide many of the fixes that participants in this evaluation recommended. In the long-term, the team could examine different possible views and mechanisms for interacting with servables and fragments, and provide the optimal solution. Providing the smaller fixes will increase user satisfaction, and the ease of completing tasks. The long-term work will address the underlying or deeper causes for the participants disliking the current UI, and will likely make a bigger impact on increasing ease of use and user satisfaction.

Short-term fixes can help users learn the interface, and minimize problems if users' conceptual model differs from the model upon which Franklin operates. For instance, the search button is the only button operable in the initial view of Franklin. This button, however, is gray and appears too similar in state to the other buttons that are inoperable at this point. Providing a better visual cue that users can begin work by clicking the search button, and implementing other improvements that users in this evaluation recommended, can go a long way toward improving the usability of Franklin.

*That all of the participants listed the UI as the primary disadvantage of the product suggests that these short-term fixes will not arrive at the optimal solution for interacting with servables and fragments, however. More work needs to be done to arrive at a solution that matches the user's conceptual model.*

*A few of the bigger issues that need to be addressed are:*

- What is the base view for interacting with servables and fragments?*
- What is the start view for interacting with servables and fragments, and is it different from the base view?*
- Do users want/need additional views or mechanisms for interacting with servables and fragments?*
- How do users conceptualize organizing fragments and servables?*
- How do users conceptualize accessing servables and fragments?*
- How do users conceptualize moving from a view of documents in a library to a work view?*

*Franklin currently opens into the work-plane view in which no documents are visible to beginning users. This view could also be considered the base view. One reason users may find Franklin initially difficult to use is because much of the functionality is initially hidden. There are not many cues for how to begin. An alternative design solution would be to open into a library or browsable view of documents provides a search interface for finding and checking out fragments and servables. It may be that users would prefer the library of documents, and the ability to preview documents, to be the base view.*

*Currently, users enter parameters and search for documents they want to work with, or they can retrieve documents based on the URL. The search functionality and retrieve based on a URL are both very useful tools, but users might like additional functionality and additional views of the content. Currently, users cannot see from the search interface how documents are organized. Providing a browsable library could be one means of providing an overview of the page types, or servables, and the fragments that constitute the pages. The library, in the form of a simple tree structure for example, could facilitate accessing fragments by the servables that contain them, which in turn could give users additional cues as to which fragments are used to create specific servables.*

## codeReview

- positioning for deeply indented dtds (ie not in iv\_mainPane)
- I noticed one oddity when using the +/-: I added 2 list items to listfragment and i only filled in linktitle and description. i checked it in, then checked it back out. now when i add more list items using +/- , it only adds linktitle and description, not the 4 fields that should be there. do you know what might be going on? i can show you on Monday if this description is cryptic...
- CheckoutForView (like checkout without lock)
  - implement checkoutForView which is a GET without lock token
  - flag on fragment, iv\_readonly = false;
  - from either active list or search can do a getForView
  - put into edit window (right side) without being able to modify
  - disable the checkin button for read only fragments
  - title bar include READ only "-- Read only --"
  - [weird cases:
    - [1 viewing fragment, now want to check it out, can't easily do it]
    - [2 if viewing fragment, then search and do a checkout, it will just go to existing fragment, which is still in read mode]
    - [3 test... with new icons]
- Logout... pr
  - choose which
  - offline edit:
  - on login fil
  - 1. unlock unv
  - 2. save dtd &
- offline editi
- stale session
- show media fi
- publish info l
- copy and creat
- search nresult
- captitalize fo... (and smaller) for table headings...
- (tag1 | tag2)\* method hasQualifier doesnt find model with () groupings
- chuck button for audio fragment, checkoutForView
- change login init file name ie "franklin\_init.xml" -> "/login"
  - synch with jeff

ents or keep for editing  
file, locktoken  
ragments

: local dtds.

ORIZED

rowseLocal entry

operly indented

**Scott Smiley**

**From:** Jon Gibbons  
**Sent:** Monday, April 04, 2005 4:43 PM  
**To:** Scott Smiley  
**Subject:** FW: Franklin Editor UI

---

**From:** Dikran S Meliksetian [mailto:Dikran\_Meliksetian@us.ibm.com]  
**Sent:** Thursday, March 24, 2005 2:30 PM  
**To:** Jon Gibbons  
**Cc:** Louis Weitzman; Sara Elo-Dean  
**Subject:** Fw: Franklin Editor UI

Jon,

Here is a note dated  
client.  
We are still looking at  
1999 timeframe. The a  
could be delivered to pc

6

to download/install and use the franklin

believe should be in November/December  
robust working code and manuals taht

Dikran

---

Forwarded by  
Sara Elo/Armonk/IBM

02/02/2000 03:49 PM

---

Mountain View/IBM@IBMUS, John  
Somers/IBM@IBMUS, Stephen Kennedy/Somers/IBM@IBMUS, Patrick  
Rooney/Boulder/IBM@IBMUS  
cc Franklin, Maria Hernandez/Somers/IBM@IBMUS  
Subject Franklin Editor UI

Hi all,

**Install:**

Please go to <http://monolith.adtech.internet.ibm.com/franklin/downloads/index.html> for  
"How to download Franklin Editor UI" and  
"How to get started with Franklin UI"

Once you have the client installed and running you might want to try the following things:

**Try out:**

1) Search for "Document Type = SoftwareSalesManual", Check-Out from the server the fragment entitled  
"Net.Commerce". This is based on the DTD Patrick provided, filled in with Net.Commerce data. Feel free to  
create a new SWSalesManual fragment to see how the authoring works.

4/4/2005



2) Search for "Document Type = SWSALESMANUALPAGE" and select the "Net.Commerce" servable you get back. This is a page that imports the fragment in 1) If you merge this document into your Active List, you can preview it to see how a page gets rendered into HTML using LotusXSL. You can also check it out to see its contents.

3) Search for "Document Type = PRODUCTPAGE". Check-Out from the server the "Netfinity" servable and Preview it. This is another example of a Page made up of 4 subfragments rendered in HTML.

4) Go wild, create any fragments and pages to get a feel for the editor. The current server is a play space.

**Caveats:**

- Please ignore anything entitled "Test" in the search results. Those are our tests...
- In the SWSalesManual, the fields containing <P>, <LI> etc... are not yet rendered correctly in the final HTML. We are working on integrating the mechanism, small matter of programming...

**User Names:**

Below are your usernames and passwords for the Franklin Editor:

```
<USER>
  <NAME>Ron Lautmann</NAME>
  <EMAIL>lautmann@us.ibm.com</EMAIL>
  <PASSWORD>ron</PASSWORD>
  <ROLE>Editor</ROLE>
</USER>
<USER>
  <NAME>John Dorval</NAME>
  <EMAIL>dorval@us.ibm.com</EMAIL>
  <PASSWORD>john</PASSWORD>
  <ROLE>Editor</ROLE>
</USER>
<USER>
  <NAME>Stephen Kennedy</NAME>
  <EMAIL>stephen@us.ibm.com</EMAIL>
  <PASSWORD>stephen</PASSWORD>
  <ROLE>Editor</ROLE>
</USER>
<USER>
  <NAME>Patrick Rooney</NAME>
  <EMAIL>rooney@us.ibm.com</EMAIL>
  <PASSWORD>patrick</PASSWORD>
  <ROLE>Editor</ROLE>
</USER>
</USERS>
```

Don't forget that tooltips exist for all icons....

Comments, bug reports welcome, please send to me and i'll pass on...

Regards,  
Sara

.....  
Advanced Internet Technology

4/4/2005

<http://w3.webahead.ibm.com>

---

**Scott Smiley**

---

**From:** Jon Gibbons  
**Sent:** Monday, April 04, 2005 4:43 PM  
**To:** Scott Smiley  
**Subject:** FW: Franklin Editor UI

---

**From:** Dikran S Meliksetian [mailto:Dikran\_Meliksetian@us.ibm.com]  
**Sent:** Thursday, March 24, 2005 3:33 PM  
**To:** Jon Gibbons  
**Cc:** Louis Weitzman; Sara Elo-Dean  
**Subject:** Fw: Franklin Editor UI

Jon,

Here is another email in  
I do not think we will be

in it.

Dikran

----- Forwarded by Dikran S Meliksetian

**To:** John Dorval/Somers/IBM@I.  
**cc:** Louis Weitzman/Southbury/IE  
**From:** Sara Elo/Armonk/IBM@IBM  
**Subject:** Re: Franklin Editor UI L

hi John, thanks for the feedback  
also cc'ing Louis, who develops

Sara

---

Advanced Internet Technology  
<http://w3.webahead.ibm.com>

---

**To:** Sara Elo/Armonk/IBM  
**cc:**  
**From:** John Dorval/Somers/IBM@IBMUS  
**Subject:** Re: Franklin Editor UI Link

Sara,  
Thanks it installed no problem. Your team is doing a terrific job. I'm very impressed with the functionality.  
Don't take any of the following comments as criticism – they are just suggestions for improvements.

4/4/2005

561-989-9812

FLEIT KAIN ET AL.

PAGE 25

04/08/2005 18:02

561-989-9812

FLEIT KAIN ET AL.

PAGE 25

04/08/2005 18:02

561-989-9812

FLEIT KAIN ET AL.

PAGE 25

04/08/2005 18:02

561-989-9812

FLEIT KAIN ET AL.

PAGE 25

04/08/2005 18:02

561-989-9812

FLEIT KAIN ET AL.

PAGE 25

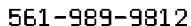
04/08/2005 18:02

561-989-9812

FLEIT KAIN ET AL.

PAGE 25

04/08/2005 18:02



FLEIT KAIN ET AL.

PAGE 25

Thanks.  
Regards, John

Enterprise Web Management, Advanced e-Business Technology  
Route 100 Somers NY  
Tel. (914) 766-1515 TI 826 Fax x-1869  
Internet: dorval@us.ibm.com

To: Ron Lautmann/Mountain View/IBM@IBMUS, John Dorval/Somers/IBM@IBMUS, Stephen Kennedy/Somers/IBM@IBMUS, Patrick Rooney/Boulder/IBM@IBMUS  
cc: Franklin, Maria Hernandez/Somers/IBM@IBMUS  
From: Sara Elo/Armonk/IBM@IBMUS  
Subject: Franklin Editor UI

Hi all,

**Install:**

Please go to <http://monolith.adtech.internet.ibm.com/franklin/downloads/index.html> for  
"How to download Franklin Editor UI" and  
"How to get started with Franklin UI"

Once you have the client installed and running you might want to try the following things:

**Try out:**

- 1) Search for "Document Type = SoftwareSalesManual", Check-Out from the server the fragment entitled "Net.Commerce". This is based on the DTD Patrick provided, filled in with Net.Commerce data. Feel free to create a new SWSalesManual fragment to see how the authoring works.
- 2) Search for "Document Type = SWSALESMANUALPAGE" and select the "Net.Commerce" servable you get back. This is a page that imports the fragment in 1) If you merge this document into your Active List, you can preview it to see how a page gets rendered into HTML using LotusXSL. You can also check it out to see its contents.
- 3) Search for "Document Type = PRODUCTPAGE". Check-Out from the server the "Netfinity" servable and Preview it. This is another example of a Page made up of 4 subfragments rendered in HTML.
- 4) Go wild, create any fragments and pages to get a feel for the editor. The current server is a play space.

**Caveats:**

- Please ignore anything entitled "Test" in the search results. Those are our tests...
- In the SWSalesManual, the fields containing <P>, <LI> etc... are not yet rendered correctly in the final HTML. We are working on integrating the mechanism, small matter of programming...

**User Names:**

Below are your usernames and passwords for the Franklin Editor:

```
<USER>
  <NAME>Ron Lautmann</NAME>
  <EMAIL>lautmann@us.ibm.com</EMAIL>
  <PASSWORD>ron</PASSWORD>
  <ROLE>Editor</ROLE>
```

```
</USER>
<USER>
  <NAME>John Dorval</NAME>
  <EMAIL>dorval@us.ibm.com</EMAIL>
  <PASSWORD>john</PASSWORD>
  <ROLE>Editor</ROLE>
</USER>
<USER>
  <NAME>Stephen Kennedy</NAME>
  <EMAIL>stephen@us.ibm.com</EMAIL>
  <PASSWORD>stephen</PASSWORD>
  <ROLE>Editor</ROLE>
</USER>
<USER>
  <NAME>Patrick Rooney</NAME>
  <EMAIL>rooney@us.ibm.com</EMAIL>
  <PASSWORD>patrick</PASSWORD>
  <ROLE>Editor</ROLE>
</USER>
</USERS>
```

Don't forget that tooltips exist for all icons....

Comments, bug reports welcome, please send to me and i'll pass on...

Regards,  
Sara

.....  
Advanced Internet Technology  
<http://w3.webahead.ibm.com>  
.....



Franklin Editor

Active List

0

<IMAGEFRAGMENT 3: title>

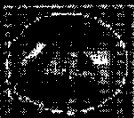
Page 1 of 1



franklin image test

NONE

/multimedia/images  
franklin\_small.gif  
/imgprmediat/franklin\_small.gif





 Search Interface

**Format Query**

Search Criteria

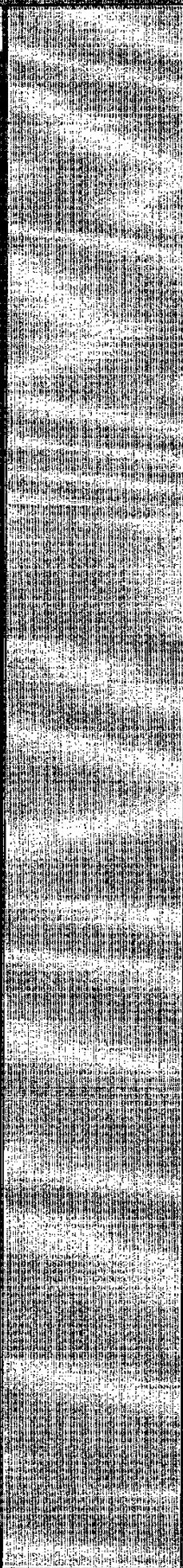
2000-02-18

2000-02-18

**Query Results**



| 6087cd0dd1... | IMAGEFRAG...  | 2000-02-24 0... | title        | X | FRAGMENT |
|---------------|---------------|-----------------|--------------|---|----------|
| 6087cd0dd1... | TESTASSOC     | 2000-02-24 0... | assoc test   | X | FRAGMENT |
| 6087cd0dd1... | TEXTFRAGM...  | 2000-02-23 1... | test         | X | FRAGMENT |
| 6087cd0dd1... | LISTFRAGME... | 2000-02-22 1... | listfragment | X | FRAGMENT |
| 6087cd0dd1... | LISTFRAGME... | 2000-02-22 1... | title        | X | FRAGMENT |
| 6087cd0dd1... | TEXTFRAGM...  | 2000-02-21 2... | xxx          | X | FRAGMENT |



```
<?xml version="1.0" encoding="US-ASCII" ?>  
!DOCTYPE FRANKLIN_INIT (View Source for full doctype...)>  
- <FRANKLIN_INIT>  
- <FRAGMENTS displayname="Fragment">  
    <DTD displayname="Text"  
        href="http://frasier.dhcp.adtech.internet.ibm.com/franklin/xml/textfragment.dtd  
    <DTD displayname="Image"  
        href="http://frasier.dhcp.adtech.internet.ibm.com/franklin/xml/imagefragment.d  
    <DTD displayname="Audio"  
        href="http://frasier.dhcp.adtech.internet.ibm.com/franklin/xml/audiofragment.df  
    <DTD displayname="Video"  
        href="http://frasier.dhcp.adtech.internet.ibm.com/franklin/xml/videofragment.dt  
</FRAGMENTS>  
- <SERVABLES displayname="Page">  
    <DTD displayname="Page one"  
        href="http://frasler.dhcp.adtech.Internet.Ibm.com/franklin/xml/servableone.dtd"  
    <DTD displayname="Page two"  
        href="http://frasier.dhcp.adtech.interna n/franklin/xml/servabletwo.dtd"  
    <DTD displayname="Page three"  
        href="http: /franklin/xml/foo.dtd" />  
</SERVABLES>  
- <SEARCH>  
- <ATTRIBUTEList<br/><ATTRIBUTE class="Time" name="TIME" />  
<ATTRIBUTE d name="LASTMODIFIED" />  
<ATTRIBUTE di class="Integer" name="ENTSIZE" />  
<ATTRIBUTE dis class="Name" />  
<ATTRIBUTE disp ext' />  
<ATTRIBUTE disp s="Text" />  
<ATTRIBUTE disp ' class="Text" />  
<ATTRIBUTE disp class="Text" />  
<ATTRIBUTE displ - TYPE" class="Selection" />  
<ATTRIBUTE displayname="Category" name="CATEGORY" class="Selection"  
options="http://frasier/franklin/dtd/entities/categories.xml" />  
</ATTRIBUTEList>  
- <CLASSLIST>  
- <CLASS name="Time">  
    <OPERATOR>>=</OPERATOR>  
    <OPERATOR><=</OPERATOR>  
    <OPERATOR>=</OPERATOR>  
    <VALUE type="date" />  
</CLASS>  
- <CLASS name="Integer">  
    <OPERATOR>>=</OPERATOR>  
    <OPERATOR><=</OPERATOR>  
    <OPERATOR>=</OPERATOR>  
    <VALUE type="Integer" />  
</CLASS>  
- <CLASS name="Name">
```

```
<OPERATOR>is</OPERATOR>
<OPERATOR>isn't</OPERATOR>
<OPERATOR>starts with</OPERATOR>
<VALUE type="string" />
</CLASS>
- <CLASS name="Text">
  <OPERATOR>is</OPERATOR>
  <OPERATOR>starts with</OPERATOR>
  <VALUE type="string" />
</CLASS>
- <CLASS name="Selection">
  <OPERATOR>is</OPERATOR>
  <OPERATOR>isn't</OPERATOR>
  <VALUE type="drop-down" />
</CLASS>
</CLASSLIST>
- <RESULTS>
  <ATTRIBUTE displayname="Last Modified Date"
    name="LASTMODIFIEDTIME" class="Time" />
  <ATTRIBUTE displayname="Creator" name="CREATOR" class="Name" />
  <ATTRIBUTE displayname="Title" name="TITLE" class="Text" />
  <ATTRIBUTE displayname="Type" name="TYPE" class="Text" />
</RESULTS>
</SEARCH>
</FRANKLIN_INIT>
```

```

1  package com.ibm.adtech.franklin.client;
2
3  import org.w3c.dom.Element;
4  import org.w3c.dom.NodeList;
5  import org.w3c.dom.Document;
6  import org.w3c.dom.Node;
7  import com.ibm.xml.parser.*;
8  import com.ibm.xml.parsers.NonValidatingTXDOMParser;
9  import org.xml.sax.InputSource;
10 import java.awt.event.*;
11 import java.awt.*;
12 import java.net.*;
13 import java.util.*;
14 import java.io.*;
15 import javax.swing.*;
16 import javax.swing.event.*;
17 import sun.misc.BASE64Encoder;
18
19 /**
20  * This type was generated by a SmartGuide.
21  */
22 public class FranklinEditor extends JFrame {
23     // menus
24     private JMenuBar iv_menuBar          = null;
25     private JMenu     iv_fileMenu        = null;
26     private JMenu     iv_editMenu        = null;
27     private JMenu     iv_viewMenu        = null;
28     private JMenu     iv_helpMenu        = null;
29     private JMenu     iv_pageTypeMenu    = null;
30     private JMenu     iv_fragmentTypeMenu = null;
31     private JMenu     iv_historyMenu     = null;
32
33     // menuItems
34     private JMenuItem iv_exitMenuItem    = null;
35     private JMenuItem iv_backMenuItem    = null;
36     private JMenuItem iv_forwardMenuItem = null;
37     private JMenuItem iv_toolbarMenuItem = null;
38     private JMenuItem iv_statusbarMenuItem = null;
39     private JMenuItem iv_aboutBoxMenuItem = null;
40
41     // buttons
42     private JButton    iv_newButton       = null;
43     private JButton    iv_deleteButton    = null;
44     private JButton    iv_backButton      = null;
45     private JButton    iv_clearButton     = null;
46     private JButton    iv_forwardButton   = null;
47     private JButton    iv_copyButton      = null;
48     private JButton    iv_cutButton       = null;
49     private JButton    iv_pasteButton     = null;
50     private JButton    iv_checkinButton   = null;
51     private JButton    iv_checkoutButton  = null;
52
53     // fonts
54     public static Font cv_smallButtonFont = new Font("Helvetica", Font.BOLD,
55 10);
56     public static Font cv_smallLabelFont  = new Font("Helvetica", Font.BOLD,
57 10);

```

```

58     public static Font cv_labelFont          = new Font("Helvetica", Font.BOLD,
59 12);
60     public static Font cv_buttonFont         = new Font("Helvetica", Font.BOLD,
61 12);
62     public static Font cv_titleFont          = new Font("Helvetica", Font.BOLD,
63 14);
64
65     // colors
66     public static Color cv_requiredInputColor = new Color(255, 128, 128); //
67 color in ui of required DTD elements
68     public static Color cv_inputColor        = Color.white;             //
69 when filled in return to normal state
70
71     // models
72     private DefaultListModel iv_fragmentTypeModel = null;             // list
73 of DTD types for fragments
74     private DefaultListModel iv_pageTypeModel    = null;             // list
75 of DTD types for pages
76     private ActiveTableModel iv_activeTableModel = null;             //
77
78     // flags
79     public static boolean   cv_standaloneP       = true;             // if
80 true, don't go to server for dtd etc
81     public static boolean   cv_debug             = true;             // if
82 true, print out printDebug messages
83
84     // windows & panes
85     public      FragmentManager      iv_fragmentManager      =
86 null; // manager of current fragments and pages
87     public      InterfaceMaker       iv_interfaceMaker       =
88 null; // interface maker, has iv for current panel being constructed
89     public static FranklinEditor      cv_FranklinEditor      =
90 null;
91     public      JPanel               iv_editorPane           =
92 null; // right side content window
93     public      FranklinEditorTypeDialog iv_typeDialog        =
94 null; // dialog for creating fragments or pages
95     private     JPanel               iv_contentPane           = null;
96 //private     JPanel               iv_fragmentPane           = null;
97 //private     JPanel               iv_pagePane               = null;
98     private     JPanel               iv_resultsPane           = null;
99     private     JPanel               iv_fragmentCommandAndData = null;
100    private     JPanel               iv_pageCommandAndData    = null;
101    private     JPanel               iv_resultsCommandAndData  = null;
102    private     JLabel               iv_statusMsg              = null;
103    private     JToolBar              iv_toolBarPane           = null;
104    private     JPanel               iv_statusBarPane          = null;
105    private     JLabel               iv_countLabel             = null;
106    private     JPanel               iv_noPane                 = null; // when
107 no element is being edited, show this pane
108
109     public static int          cv_ERROR_MESSAGE              =
110 JOptionPane.ERROR_MESSAGE;
111     public static int          cv_INFORMATION_MESSAGE        =
112 JOptionPane.INFORMATION_MESSAGE;
113     public static int          cv_PLAIN_MESSAGE              =
114 JOptionPane.PLAIN_MESSAGE;

```

```

115         public static int             cv_QUESTION_MESSAGE         =
116 JOptionPane.QUESTION_MESSAGE;
117         public static int             cv_WARNING_MESSAGE         =
118 JOptionPane.WARNING_MESSAGE;
119
120         // sizes
121         private static int             cv_leftPaneWidth           = 200;
122         private static int             cv_leftPaneMaxWidth        = 500;
123         private static int             cv_leftPaneHeight          = 150;
124         private static int             cv_titleHeight              = 20;
125         public static int              cv_fragmentLabelWidth       = 150;
126         public static int              cv_fragmentTitleHeight      = 15;
127         public static int              cv_fragmentTextWidth        = 300;
128         public Dimension iv_screenSize = null; // used to center
129 the editor and login dialog box
130
131         // Names
132         public static String            cv_fragmentDisplayName     = "Fragment";
133         public static String            cv_servableDisplayName     = "Page";
134         public static final String      cv_DATATYPE                = "DATATYPE"; //
135 tag for identifying the UI component
136         public static final String      cv_CHOICES                 = "CHOICES"; //
137 tag for identifying the CHOICES attribute value of DATATYPE
138         public static final String      cv_SYSTEM_ELEMENT          = "SYSTEM"; //
139 tag elements filled in by system automatically
140         public static final String      cv_SPECIAL_ELEMENT         = "SPECIAL"; //
141 tag for elements different from universal.dtd
142         public static final String      cv_PAGETYPE_ELEMENT        = "PAGETYPE"; //
143 tag for PAGETYPE elements
144         public static final String[]     cv_skipElements           =
145 { cv_SYSTEM_ELEMENT }; // element tags of dtd to skip when building ui
146         public static final String[]     cv_nonDisplayElements     =
147 { cv_SPECIAL_ELEMENT, // element tags of dtd not to display (but do kids)
148 when building ui
149
150         cv_PAGETYPE_ELEMENT};
151         public TXDocument iv_initDocument = null; // document object that is
152 the result of loading franklin_init.xml
153         private String    iv_sessionID   = null; // session ID received from
154 the logging in process.
155 /**
156  * FranklinEditor constructor comment.
157  */
158 public FranklinEditor() {
159     super();
160 }
161 /**
162  * Insert the method's description here.
163  * Creation date: (10/7/99 7:13:39 PM)
164  */
165 public void back() {
166     iv_fragmentManager.back();
167     redisplayEditorPane();
168 }
169 /**
170  * Checkin setups up the document in the fragment (updating it from the ui)
171  * validates it, and sends it to the server. If all works, it updates the

```

```

172  * SYSTEM data in the document object from the result TXDocument returned.
173  * ++++ if checkin works, update the fragments uid. and last modified time, etc
174  *
175  * Creation date: (10/8/99 11:15:52 AM)
176  */
177  public void checkin() {
178      ClientFragment lv_fragment = iv_fragmentManager.getCurrentFragment();
179      // get the current fragment/page being edited
180      if (lv_fragment == null) {
181          FranklinEditor.printDebug("No fragment or page to checkin");
182          setStatusMessage("Nothing to check in");
183      }
184      else {
185          try {
186              FranklinEditor.printDebug("Checking in " + lv_fragment);
187              setStatusMessage("Checking in " + lv_fragment);
188              lv_fragment.checkinSetup();
189              // grab content out of ui,
190              boolean lv_isValid = lv_fragment.validate();
191              // also highlights ui errors
192              if (lv_isValid == true) {
193                  lv_fragment.iv_document.printWithFormat(new
194                  PrintWriter(System.out));
195                  TXDocument lv_checkinResults =
196                  Dispatcher.checkin(lv_fragment);           // get results back from
197                  dispatcher (on server)
198                  if (cv_debug) {
199                      lv_checkinResults.printWithFormat(new
200                      PrintWriter(System.out));           // print result document to stream
201                  }
202                  removeFragmentOrPage(lv_fragment);
203                  // remove from the ui
204                  lv_fragment.replaceSystemTag(lv_checkinResults);
205                  // add SYSTEM tags back into the fragment
206                  lv_fragment.checkinCacheActiveHeaders();
207                  iv_activeTableModel.addFragment(lv_fragment);
208                  // add to active list
209                  }
210                  else {
211                      setStatusMessage("Error validating " + lv_fragment);
212                      showMessageDialog("Document is invalid. Please edit
213                      highlighted elements and resubmit",
214                      FranklinEditor.cv_ERROR_MESSAGE);
215                  }
216              }
217              catch (IOException lv_e) {
218                  System.out.println("Error printing checkin results set");
219              }
220          }
221      }
222  }
223  /**
224   * checkout the currently selected set of fragments or pages
225   * if one just do it. if more than one confirm selections, or use progress bar
226   * that the user can cancel after a certain number have been checked out
227   */
228  public void checkout() {

```

```

229         FranklinEditor.printDebug("checkout");
230     }
231     /**
232     * Clear the interface widgets for the current fragment or page
233     */
234     public void clearCurrentFragmentOrPage() {
235         System.out.println("clearCurrentFragmentOrPage");
236         ClientFragment lv_fragment = iv_fragmentManager.getCurrentFragment();
237         if (lv_fragment != null) {
238             lv_fragment.clearInterface();
239         }
240     }
241     /**
242     * Insert the method's description here.
243     * Creation date: (9/29/99 11:36:37 AM)
244     */
245     public void clearStatusMessage() {
246         iv_statusMsg.setText("");
247     }
248     /**
249     * Create a new fragment object of type lv_type
250     * if not in DTD hashtable for fragments read in the DTD,
251     * save DTD in hashtable
252     * create an instance of this DTD as a ClientFragment object (which extends
253     TXDocument)
254     * add to history list (history list(vector), current item)
255     * display ClientFragment (save UI widgets on ClientFragment)
256     *
257     * Creation date: (10/7/99 2:24:27 PM)
258     * @param lv_type java.lang.String
259     */
260     public void createFragment(String lv_name) {
261         printDebug("createFragment = " + lv_name);
262
263         DTD lv_dtd = Dispatcher.getFragmentDTD(lv_name);
264         if (lv_dtd == null) {
265             System.out.println("FranklinEditor.createFragment: Error loading '"
266 + lv_name + "' DTD from server");
267             return;
268         }
269         createFragmentInternal(lv_dtd);
270     }
271     /**
272     * Common tasks for creating a fragment or page ClientFragment object
273     * create an instance of this DTD as a ClientFragment object (which extends
274     TXDocument)
275     * add to history list (history list(vector), current item)
276     * attach method to go to fragment from history menu
277     * display ClientFragment (save UI widgets on ClientFragment)
278     *
279     * Creation date: (10/7/99 2:24:27 PM)
280     * @param lv_type java.lang.String
281     */
282     public void createFragmentInternal(DTD lv_dtd) {
283         // create client fragment
284         ClientFragment lv_fragment = new ClientFragment(iv_fragmentManager,
285 lv_dtd);

```



```

286
287     // add to history menu
288     iv_historyMenu.add(lv_fragment.getMenuItem());
289
290     // redisplay the editor pane
291     redisplayEditorPane();
292 }
293 /**
294  * create a new page object of type lv_type.
295  * add to history list
296  * and DTD to dtd hashtable
297  * Creation date: (10/7/99 2:24:27 PM)
298  * @param lv_type java.lang.String
299  */
300 public void createPage(String lv_name) {
301     printDebug("createPage = " + lv_name);
302
303     DTD lv_dtd = Dispatcher.getPageDTD(lv_name);
304     if (lv_dtd == null) {
305         System.out.println("FranklinEditor.createPage: Error loading '" +
306 lv_name + "' DTD from server");
307         return;
308     }
309     createFragmentInternal(lv_dtd);
310 }
311 /**
312  * delete fragement or page from UI and backend server
313  * Creation date: (9/29/99 11:36:37 AM)
314  */
315 public void deleteCurrentFragmentOrPage() {
316     System.out.println("deleteCurrentFragmentOrPage");
317     ClientFragment lv_fragment = iv_fragmentManager.getCurrentFragment();
318     if (lv_fragment != null) {
319         removeCurrentFragmentOrPage();
320 // remove from ui
321         String lv_status = Dispatcher.deleteFragment(lv_fragment);
322 // delete from server
323         setStatusMessage(lv_status);
324     }
325 }
326 /**
327  * Insert the method's description here.
328  * Creation date: (10/7/99 7:13:39 PM)
329  */
330 public void editCopy() {
331     setStatusMessage("Copy not yet implemented");
332 }
333 /**
334  * Insert the method's description here.
335  * Creation date: (10/7/99 7:13:39 PM)
336  */
337 public void editCut() {
338     setStatusMessage("Cut not yet implemented");
339
340     /*
341     // this is example of how to create xml from TXDocument
342     try {

```

```

343         StringWriter lv_writer = new StringWriter();
344         iv_initDocument.toXMLString(lv_writer);
345         System.out.println("xml from iv_initDocument -----");
346         //System.out.println(lv_writer.toString());
347
348         com.ibm.adtech.franklin.Fragment lv_fragment =
349 com.ibm.adtech.franklin.Fragment.XML2Fragment(lv_writer.toString());
350         System.out.println(lv_fragment);
351         System.out.println(lv_fragment.toXMLString());
352
353
354     }
355     catch (IOException lv_e) {
356         System.out.println("editCut: Error trying to write XML for
357 iv_initDocument");
358     }
359     */
360 }
361 /**
362  * Insert the method's description here.
363  * Creation date: (10/7/99 7:13:39 PM)
364  */
365 public void editPaste() {
366     setStatusMessage("Paste not yet implemented");
367 }
368 /**
369  * exitFranklinEditor:
370 (ExitMenuItem.actionPerformed(java.awt.event.ActionEvent) -->
371 FranklinEditor.dispose()V)
372  * @param arg1 java.awt.event.ActionEvent
373  */
374 private void exitFranklinEditor() {
375     try {
376         if (!cv_standaloneP) {
377             Dispatcher.logout(this);
378         }
379         this.dispose();
380     }
381     catch (java.lang.Throwable ivjExc) {
382         handleException(ivjExc);
383     }
384 }
385 /**
386  * Insert the method's description here.
387  * Creation date: (9/29/99 11:36:37 AM)
388  */
389 public void expandResultsPane() {
390     System.out.println("expandResultsPane");
391     Dimension lv_dim = iv_resultsPane.getSize();
392     lv_dim.height = 0;
393     iv_resultsCommandAndData.setMinimumSize(lv_dim);
394     lv_dim.height = 100;
395     iv_resultsCommandAndData.setPreferredSize(lv_dim);
396     lv_dim.height = 500;
397     iv_resultsCommandAndData.setMaximumSize(lv_dim);
398     iv_resultsPane.doLayout();
399 }

```

```

400  /**
401   * Insert the method's description here.
402   * Creation date: (10/7/99 7:13:39 PM)
403   */
404  public void forward() {
405      iv_fragmentManager.forward();
406      redisplayEditorPane();
407  }
408  /**
409   * Insert the method's description here.
410   * Creation date: (9/29/99 11:36:37 AM)
411   */
412  public JMenuItem getAboutBoxMenuItem() {
413      return iv_aboutBoxMenuItem;
414  }
415  /**
416   * Insert the method's description here.
417   * Creation date: (9/29/99 11:36:37 AM)
418   */
419  private JPanel getActiveTablePane() {
420      JPanel lv_resultsPane      = new JPanel();
421      JPanel lv_title            = new JPanel();
422      JPanel lv_commands        = new JPanel();
423      JLabel lv_titleLabel      = new JLabel(" Active List",
424      SwingConstants.LEFT);
425      iv_countLabel              = new JLabel("0 ",
426      SwingConstants.RIGHT);
427      JButton lv_searchButton    = new JButton("Search");
428      JButton lv_viewButton      = new JButton("View");
429      JButton lv_checkoutButton  = new JButton("Checkout");
430      iv_resultsCommandAndData  = new JPanel();
431
432      // fonts
433      lv_searchButton.setFont(cv_buttonFont);
434      lv_viewButton.setFont(cv_buttonFont);
435      lv_checkoutButton.setFont(cv_buttonFont);
436      lv_titleLabel.setFont(cv_titleFont);
437      iv_countLabel.setFont(cv_smallLabelFont);
438
439      // colors
440      iv_resultsCommandAndData.setBackground(Color.white);
441      lv_title.setBackground(Color.black);
442      lv_titleLabel.setForeground(Color.white);
443      iv_countLabel.setForeground(Color.white);
444
445      iv_activeTableModel      = new ActiveTableModel(this);
446      JTable lv_activeTable    = new JTable(iv_activeTableModel);
447      JScrollPane lv_scroll    = new JScrollPane(lv_activeTable);
448
449      lv_title.setLayout(new BorderLayout());
450      lv_title.add(lv_titleLabel, "West");
451      lv_title.add(iv_countLabel, "East");
452
453      lv_commands.setLayout(new BoxLayout(lv_commands, BoxLayout.X_AXIS));
454      lv_commands.add(lv_searchButton);
455      lv_commands.add(lv_viewButton);
456      lv_commands.add(lv_checkoutButton);

```

```

457         lv_commands.add(Box.createHorizontalGlue());
458
459         iv_resultsCommandAndData.setLayout(new BorderLayout());
460         iv_resultsCommandAndData.add(lv_commands, "North");
461         iv_resultsCommandAndData.add(lv_scroll, "Center");
462
463         lv_resultsPane.setLayout(new BorderLayout());
464         lv_resultsPane.add(lv_title, "North");
465         lv_resultsPane.add(iv_resultsCommandAndData, "Center");
466
467         lv_resultsPane.setPreferredSize(new
468 Dimension(cv_leftPaneWidth, cv_leftPaneHeight));
469
470         return lv_resultsPane;
471
472
473         // ToolTips
474         //lv_toggleButton.setToolTipText("Collapse active list pane");
475
476         /**
477         lv_toggleButton.addItemListener(new ItemListener() {
478             public void itemStateChanged(ItemEvent lv_e) {
479                 JToggleButton lv_b = (JToggleButton)lv_e.getSource();
480                 if (lv_b.getModel().isSelected()) {
481                     setStatusMessage("Collapsing active list pane");
482                     lv_b.setToolTipText("Expand active list pane");
483                     lv_b.setText("Open");
484                     collapseResultsPane();
485                 }
486                 else {
487                     setStatusMessage("Expanding active list pane");
488                     lv_b.setToolTipText("Collapse active list pane");
489                     lv_b.setText("Close");
490                     expandResultsPane();
491                 }
492             }
493         });
494
495         lv_toggleButton.addChangeListener(new ChangeListener() {
496             public void stateChanged(ChangeEvent lv_e) {
497                 //System.out.println("change listener");
498             }
499         });
500
501         lv_toggleButton.addActionListener(new ActionListener() {
502             public void actionPerformed(ActionEvent lv_e) {
503                 //System.out.println("action event");
504             }
505         });
506         */
507
508     }
509     /**
510     * Insert the method's description here.
511     * Creation date: (10/8/99 10:54:36 AM)
512     * @return javax.swing.JMenuItem

```

```

514     */
515 public JMenuItem getBackMenuItem() {
516     return iv_backMenuItem;
517 }
518 /**
519  * Return the EditMenu property value.
520  * @return javax.swing.JMenu
521  */
522 private javax.swing.JMenu getEditMenu() {
523     if (iv_editMenu == null) {
524         try {
525
526             JMenuItem lv_copyMenuItem = new javax.swing.JMenuItem();
527             lv_copyMenuItem.setName("CopyMenuItem");
528             lv_copyMenuItem.setText("Copy");
529
530             JMenuItem lv_undoMenuItem = new javax.swing.JMenuItem();
531             lv_undoMenuItem.setName("UndoMenuItem");
532             lv_undoMenuItem.setText("Undo");
533
534             JMenuItem lv_redoMenuItem = new javax.swing.JMenuItem();
535             lv_redoMenuItem.setName("RedoMenuItem");
536             lv_redoMenuItem.setText("Redo");
537
538             JMenuItem lv_cutMenuItem = new javax.swing.JMenuItem();
539             lv_cutMenuItem.setName("CutMenuItem");
540             lv_cutMenuItem.setText("Cut");
541
542             JMenuItem lv_pasteMenuItem = new javax.swing.JMenuItem();
543             lv_pasteMenuItem.setName("PasteMenuItem");
544             lv_pasteMenuItem.setText("Paste");
545
546             JMenuItem lv_removeMenuItem = new javax.swing.JMenuItem();
547             lv_removeMenuItem.setName("RemoveMenuItem");
548             lv_removeMenuItem.setText("Remove");
549             lv_removeMenuItem.addActionListener(new ActionListener() {
550                 public void actionPerformed(ActionEvent lv_e) {
551                     removeCurrentFragmentOrPage();
552                 }
553             });
554
555             JMenuItem lv_deleteMenuItem = new javax.swing.JMenuItem();
556             lv_deleteMenuItem.setName("DeleteMenuItem");
557             lv_deleteMenuItem.setText("Delete");
558             lv_deleteMenuItem.addActionListener(new ActionListener() {
559                 public void actionPerformed(ActionEvent lv_e) {
560                     deleteCurrentFragmentOrPage();
561                 }
562             });
563
564             JMenuItem lv_selectAllMenuItem = new javax.swing.JMenuItem();
565             lv_selectAllMenuItem.setName("Select_AllMenuItem");
566             lv_selectAllMenuItem.setText("Select All");
567
568             JMenuItem lv_findReplaceMenuItem = new
569 javax.swing.JMenuItem();
570             lv_findReplaceMenuItem.setName("Find_ReplaceMenuItem");

```

```

571         lv_findReplaceMenuItem.setText("Find/Replace");
572
573         iv_editMenu = new javax.swing.JMenu();
574         iv_editMenu.setName("EditMenu");
575         iv_editMenu.setText("Edit");
576
577
578         iv_editMenu.add(lv_undoMenuItem);
579         iv_editMenu.add(lv_redoMenuItem);
580         iv_editMenu.add(new JSeparator());
581         iv_editMenu.add(lv_cutMenuItem);
582         iv_editMenu.add(lv_copyMenuItem);
583         iv_editMenu.add(lv_pasteMenuItem);
584         iv_editMenu.add(new JSeparator());
585         iv_editMenu.add(lv_removeMenuItem);
586         iv_editMenu.add(lv_deleteMenuItem);
587         iv_editMenu.add(lv_selectAllMenuItem);
588         iv_editMenu.add(lv_findReplaceMenuItem);
589
590     }
591     catch (java.lang.Throwable ivjExc) {
592         handleException(ivjExc);
593     }
594 }
595 return iv_editMenu;
596 }
597 /**
598  * Insert the method's description here.
599  * Creation date: (9/29/99 11:36:37 AM)
600  */
601 public JMenuItem getExitMenuItem() {
602     return iv_exitMenuItem;
603 }
604 /**
605  * Return the FileMenu property value.
606  * @return javax.swing.JMenu
607  */
608 private javax.swing.JMenu getFileMenu() {
609     if (iv_fileMenu == null) {
610         try {
611             JMenuItem lv_searchMenuItem = new javax.swing.JMenuItem();
612             lv_searchMenuItem.setName("SearchMenuItem");
613             lv_searchMenuItem.setText("Search");
614             //lv_searchMenuItem.setActionCommand("OpenFragment");
615             lv_searchMenuItem.addActionListener(new ActionListener() {
616                 public void actionPerformed(ActionEvent lv_e) {
617                     search();
618                 }
619             });
620
621             JMenuItem lv_saveMenuItem = new javax.swing.JMenuItem();
622             lv_saveMenuItem.setName("SaveMenuItem");
623             lv_saveMenuItem.setText("Check In");
624             lv_saveMenuItem.addActionListener(new ActionListener() {
625                 public void actionPerformed(ActionEvent lv_e) {
626                     checkin();
627                 }
628             });

```

```

628         });
629
630         JMenuItem lv_loadAllMenuItem = new javax.swing.JMenuItem();
631         lv_loadAllMenuItem.setName("LoadAllMenuItem");
632         lv_loadAllMenuItem.setText("Load All DTDs");
633         lv_loadAllMenuItem.addActionListener(new ActionListener() {
634             public void actionPerformed(ActionEvent lv_e) {
635                 loadAllDTDs();
636             }
637         });
638
639         JMenuItem lv_reloadMenuItem = new javax.swing.JMenuItem();
640         lv_reloadMenuItem.setName("ReloadMenuItem");
641         lv_reloadMenuItem.setText("Initialize DTDs");
642         lv_reloadMenuItem.addActionListener(new ActionListener() {
643             public void actionPerformed(ActionEvent lv_e) {
644                 reloadDTDs();
645             }
646         });
647
648         iv_exitMenuItem = new javax.swing.JMenuItem();
649         iv_exitMenuItem.setName("ExitMenuItem");
650         iv_exitMenuItem.setText("Exit");
651         iv_exitMenuItem.addActionListener(new ActionListener() {
652             public void actionPerformed(ActionEvent lv_e) {
653                 exitFranklinEditor();
654             }
655         });
656
657         iv_fileMenu = new javax.swing.JMenu();
658         iv_fileMenu.setName("FileMenu");
659         iv_fileMenu.setText("File");
660         iv_fileMenu.add(getFragmentTypeMenu());
661         iv_fileMenu.add(getPageTypeMenu());
662         iv_fileMenu.add(new JSeparator());
663         iv_fileMenu.add(lv_loadAllMenuItem);
664         iv_fileMenu.add(lv_reloadMenuItem);
665         iv_fileMenu.add(new JSeparator());
666         iv_fileMenu.add(lv_searchMenuItem);
667         iv_fileMenu.add(new JSeparator());
668         iv_fileMenu.add(lv_saveMenuItem);
669         iv_fileMenu.add(new JSeparator());
670         iv_fileMenu.add(iv_exitMenuItem);
671
672         } catch (java.lang.Throwable ivjExc) {
673             handleException(ivjExc);
674         }
675     }
676     return iv_fileMenu;
677 }
678 /**
679  * Insert the method's description here.
680  * Creation date: (10/8/99 10:54:36 AM)
681  * @return javax.swing.JMenuItem
682  */
683 public JMenuItem getForwardMenuItem() {
684     return iv_forwardMenuItem;

```

```

685 }
686 /**
687  * Insert the method's description here.
688  * Creation date: (9/29/99 11:36:37 AM)
689  */
690 private JPanel getFragmentPane() {
691     JPanel lv_fragmentPane      = new JPanel();
692     JPanel lv_title             = new JPanel();
693     JPanel lv_commands          = new JPanel();
694     JLabel lv_titleLabel        = new JLabel(" Fragments",
695 SwingConstants.LEFT);
696     JToggleButton lv_toggleButton = new JToggleButton("Close");
697     JButton lv_createButton = new JButton("Create");
698     iv_fragmentCommandAndData     = new JPanel();
699
700     // Fonts
701     lv_createButton.setFont(cv_buttonFont);
702     lv_titleLabel.setFont(cv_titleFont);
703     lv_toggleButton.setFont(cv_smallButtonFont);
704     // Colors
705     lv_title.setBackground(Color.black);
706     lv_titleLabel.setForeground(Color.white);
707     // ToolTips
708     lv_toggleButton.setToolTipText("Collapse fragment pane");
709
710     lv_toggleButton.addItemListener(new ItemListener() {
711         public void itemStateChanged(ItemEvent lv_e) {
712             JToggleButton lv_b = (JToggleButton)lv_e.getSource();
713             if (lv_b.getModel().isSelected()) {
714                 setStatusMessage("Collapsing fragment pane");
715                 lv_b.setToolTipText("Expand fragment pane");
716                 lv_b.setText("Open");
717                 //collapseFragmentPane();
718             }
719             else {
720                 setStatusMessage("Expanding fragment pane");
721                 lv_b.setToolTipText("Collapse fragment pane");
722                 lv_b.setText("Close");
723                 //expandFragmentPane();
724             }
725         }
726     });
727
728     JList lv_fragmentList = new JList(getFragmentTypeModel());
729     JScrollPane lv_scroll = new JScrollPane(lv_fragmentList);
730
731     lv_title.setLayout(new BorderLayout());
732     lv_title.add(lv_titleLabel, "West");
733     lv_title.add(lv_toggleButton, "East");
734
735     lv_commands.setLayout(new BoxLayout(lv_commands, BoxLayout.X_AXIS));
736     lv_commands.add(lv_createButton);
737     lv_commands.add(Box.createHorizontalGlue());
738
739     iv_fragmentCommandAndData.setLayout(new BorderLayout());
740     iv_fragmentCommandAndData.add(lv_commands, "North");
741     iv_fragmentCommandAndData.add(lv_scroll, "Center");

```



```

742
743     lv_fragmentPane.setLayout(new BorderLayout());
744     lv_fragmentPane.add(lv_title, "North");
745     lv_fragmentPane.add(iv_fragmentCommandAndData, "Center");
746
747     lv_fragmentPane.setBounds(0,0,cv_leftPaneWidth,cv_leftPaneHeight);
748
749
750     return lv_fragmentPane;
751 }
752 /**
753  * return the fragmentTypeMenu. the models should have been initialized by now
754  * so we can go to them to pick out the names to populate the menu.
755  * also add action so that when we click on the fragment, it will create an
756 instance
757  * @return javax.swing.JMenu
758  */
759
760 private javax.swing.JMenu getFragmentTypeMenu() {
761     if (iv_fragmentTypeMenu == null) {
762         try {
763             iv_fragmentTypeMenu = new javax.swing.JMenu();
764             iv_fragmentTypeMenu.setName("FragmentTypeMenu");
765             iv_fragmentTypeMenu.setText("New " + cv_fragmentDisplayName);
766             //iv_fragmentTypeMenu.setActionCommand("NewFragment");
767
768             DefaultListModel lv_model = getFragmentTypeModel();
769             for (int i = 0; i < lv_model.size(); i++) {
770                 String lv_name = (String)lv_model.elementAt(i);
771                 JMenuItem lv_menuItem = new JMenuItem();
772                 lv_menuItem.setName("MenuItem" + (i + 1));
773                 lv_menuItem.setText(lv_name);
774                 iv_fragmentTypeMenu.add(lv_menuItem);
775                 lv_menuItem.addActionListener(new ActionListener() {
776                     public void actionPerformed(ActionEvent lv_e) {
777
778                         createFragment(((JMenuItem)lv_e.getSource()).getText());
779                     }
780                 });
781             }
782
783             } catch (java.lang.Throwable ivjExc) {
784                 handleException(ivjExc);
785             }
786         }
787     return iv_fragmentTypeMenu;
788 }
789 /**
790  * Insert the method's description here.
791  * Creation date: (9/29/99 11:36:37 AM)
792  */
793 public DefaultListModel getFragmentTypeModel() {
794     if (iv_fragmentTypeModel == null) {
795         iv_fragmentTypeModel = new DefaultListModel();
796     }
797     return iv_fragmentTypeModel;
798 }

```

```

799  /**
800   * Return the FranklinEditorJMenuBar property value.
801   * @return javax.swing.JMenuBar
802   */
803  /* WARNING: THIS METHOD WILL BE REGENERATED. */
804  private javax.swing.JMenuBar getFranklinEditorJMenuBar() {
805      if (iv_menuBar == null) {
806          try {
807              iv_menuBar = new javax.swing.JMenuBar();
808              iv_menuBar.setName("FranklinEditorMenuBar");
809              iv_menuBar.add(getFileMenu());
810              iv_menuBar.add(getEditMenu());
811              iv_menuBar.add(getViewMenu());
812              iv_menuBar.add(getHelpMenu());
813          }
814          catch (java.lang.Throwable ivjExc) {
815              handleException(ivjExc);
816          }
817      }
818      return iv_menuBar;
819  }
820  /**
821   * Return the HelpMenu property value.
822   * @return javax.swing.JMenu
823   */
824  /* WARNING: THIS METHOD WILL BE REGENERATED. */
825  private javax.swing.JMenu getHelpMenu() {
826      if (iv_helpMenu == null) {
827          try {
828              iv_aboutBoxMenuItem = new javax.swing.JMenuItem();
829              iv_aboutBoxMenuItem.setName("AboutBoxMenuItem");
830              iv_aboutBoxMenuItem.setText("About Franklin");
831
832              iv_aboutBoxMenuItem.addActionListener(new ActionListener() {
833                  public void actionPerformed(ActionEvent lv_e) {
834                      showAboutBox();
835                  }
836              });
837
838              JMenuItem lv_helpTopicsMenuItem = new
839  javax.swing.JMenuItem();
840              lv_helpTopicsMenuItem.setName("Help_TopicsMenuItem");
841              lv_helpTopicsMenuItem.setText("Help Topics");
842
843              lv_helpTopicsMenuItem.addActionListener(new ActionListener()
844  {
845                  public void actionPerformed(ActionEvent lv_e) {
846                      showHelpTopics();
847                  }
848              });
849
850              iv_helpMenu = new javax.swing.JMenu();
851              iv_helpMenu.setName("HelpMenu");
852              iv_helpMenu.setText("Help");
853
854              iv_helpMenu.add(lv_helpTopicsMenuItem);
855

```

```

856         iv_helpMenu.add(iv_aboutBoxMenuItem);
857     }
858     catch (java.lang.Throwable ivjExc) {
859         handleException(ivjExc);
860     }
861 }
862 return iv_helpMenu;
863 }
864 /**
865  * Return the JFrameContentPane property value.
866  * @return javax.swing.JPanel
867  */
868 private javax.swing.JPanel getJFrameContentPane() {
869     if (iv_contentPane == null) {
870         try {
871             // get 3 left column panes
872             //iv_fragmentPane = getFragmentPane();
873             //iv_pagePane = getPagePane();
874             iv_resultsPane = getActiveTablePane();
875             JPanel lv_extraPane = new JPanel();           /// extra
876 pane when everything is collapsed
877             JScrollPane lv_scrollPane = null;
878
879             // right side editor pane
880             iv_editorPane = getNoPane();
881             lv_scrollPane = new JScrollPane(iv_editorPane);
882
883             // horizontal split pane
884             JSplitPane lv_horizontalSplitPane = new
885 javax.swing.JSplitPane(javax.swing.JSplitPane.HORIZONTAL_SPLIT);
886             lv_horizontalSplitPane.setName("HorizontalSplitPane");
887             lv_horizontalSplitPane.add(iv_resultsPane, "left");
888             lv_horizontalSplitPane.add(lv_scrollPane, "right");
889
890             iv_contentPane = new javax.swing.JPanel();
891             iv_contentPane.setName("JFrameContentPane");
892             iv_contentPane.setLayout(new java.awt.BorderLayout());
893             iv_contentPane.add(getToolBarPane(), "North");
894             iv_contentPane.add(lv_horizontalSplitPane, "Center");
895             iv_contentPane.add(getStatusBarPane(), "South");
896
897         } catch (java.lang.Throwable ivjExc) {
898             handleException(ivjExc);
899         }
900     }
901     return iv_contentPane;
902 }
903 /**
904  * Insert the method's description here.
905  * Creation date: (9/29/99 11:36:37 AM)
906  */
907 public JButton getNewToolbarButton() {
908     return iv_newButton;
909 }
910 /**
911  * return the iv_noPane panel for display when no element is being edited

```

```

913     * Creation date: (10/12/99 8:55:10 AM)
914     */
915 private JPanel getNoPane() {
916     if (iv_noPane == null) {
917         iv_noPane = new JPanel();
918         JLabel lv_label = new JLabel("No fragment being edited",
919 SwingConstants.LEFT);
920         lv_label.setFont(cv_titleFont);
921         iv_noPane.setLayout(new BorderLayout());
922         iv_noPane.add(lv_label, "North");
923     }
924     return iv_noPane;
925 }
926 /**
927  * Insert the method's description here.
928  * Creation date: (9/29/99 11:36:37 AM)
929  */
930 private JPanel getPagePane() {
931     JPanel lv_pagePane = new JPanel();
932     JPanel lv_title = new JPanel();
933     JPanel lv_commands = new JPanel();
934     JLabel lv_titleLabel = new JLabel(" Pages", SwingConstants.LEFT);
935     JToggleButton lv_toggleButton = new JToggleButton("Close");
936     JButton lv_createButton = new JButton("Create");
937     iv_pageCommandAndData = new JPanel();
938
939     // Fonts
940     lv_createButton.setFont(cv_buttonFont);
941     lv_titleLabel.setFont(cv_titleFont);
942     lv_toggleButton.setFont(cv_smallButtonFont);
943     // Colors
944     lv_title.setBackground(Color.black);
945     lv_titleLabel.setForeground(Color.white);
946     // ToolTips
947     lv_toggleButton.setToolTipText("Collapse page pane");
948
949     lv_toggleButton.addItemListener(new ItemListener() {
950         public void itemStateChanged(ItemEvent lv_e) {
951             JToggleButton lv_b = (JToggleButton)lv_e.getSource();
952             if (lv_b.getModel().isSelected())
953             {
954                 // expand
955                 setStatusMessage("Collapsing page pane");
956                 lv_b.setToolTipText("Expand page pane");
957                 lv_b.setText("Open");
958                 //collapsePagePane();
959             }
960             else
961             {
962                 // collapse
963                 setStatusMessage("Expanding page pane");
964                 lv_b.setToolTipText("Collapse page pane");
965                 lv_b.setText("Close");
966                 //expandPagePane();
967             }
968         }
969     });
970     lv_toggleButton.addChangeListener(new ChangeListener() {

```

```

970         public void stateChanged(ChangeEvent lv_e) {
971             //System.out.println("change listener");
972         }
973     });
974
975     lv_toggleButton.addActionListener(new ActionListener() {
976         public void actionPerformed(ActionEvent lv_e) {
977             //System.out.println("action event");
978         }
979     });
980
981     JList lv_pageList = new JList(getPageTypeModel());
982     JScrollPane lv_scroll = new JScrollPane(lv_pageList);
983
984     lv_title.setLayout(new BorderLayout());
985     lv_title.add(lv_titleLabel, "West");
986     lv_title.add(lv_toggleButton, "East");
987
988     lv_commands.setLayout(new BoxLayout(lv_commands, BoxLayout.X_AXIS));
989     lv_commands.add(lv_createButton);
990     lv_commands.add(Box.createHorizontalGlue());
991
992     iv_pageCommandAndData.setLayout(new BorderLayout());
993     iv_pageCommandAndData.add(lv_commands, "North");
994     iv_pageCommandAndData.add(lv_scroll, "Center");
995
996     lv_pagePane.setLayout(new BorderLayout());
997     lv_pagePane.add(lv_title, "North");
998     lv_pagePane.add(iv_pageCommandAndData, "Center");
999
1000     lv_pagePane.setBounds(0,0,cv_leftPaneWidth,cv_leftPaneHeight);
1001
1002     return lv_pagePane;
1003 }
1004 /**
1005  * Return the iv_pageTypeMenu. the list models should have been initialized
1006  * by now so we can use them to create the list of possible servable pages
1007  * @return javax.swing.JMenu
1008  */
1009 private javax.swing.JMenu getPageTypeMenu() {
1010     if (iv_pageTypeMenu == null) {
1011         try {
1012             iv_pageTypeMenu = new javax.swing.JMenu();
1013             iv_pageTypeMenu.setName("PageTypeMenu");
1014             iv_pageTypeMenu.setText("New " + cv_servableDisplayName);
1015
1016             DefaultListModel lv_model = getPageTypeModel();
1017             for (int i = 0; i < lv_model.size(); i++) {
1018                 String lv_name = (String)lv_model.elementAt(i);
1019                 JMenuItem lv_menuItem = new JMenuItem();
1020                 lv_menuItem.setName("MenuItem" + (i + 1));
1021                 lv_menuItem.setText(lv_name);
1022                 iv_pageTypeMenu.add(lv_menuItem);
1023                 lv_menuItem.addActionListener(new ActionListener() {
1024                     public void actionPerformed(ActionEvent lv_e) {
1025
1026                         createPage(((JMenuItem)lv_e.getSource()).getText());

```

```

1027         }
1028     });
1029 }
1030
1031     } catch (java.lang.Throwable ivjExc) {
1032         handleException(ivjExc);
1033     }
1034 }
1035     return iv_pageTypeMenu;
1036 }
1037 /**
1038  * Insert the method's description here.
1039  * Creation date: (9/29/99 11:36:37 AM)
1040  */
1041 public DefaultListModel getPageTypeModel() {
1042     if (iv_pageTypeModel == null) {
1043         iv_pageTypeModel = new DefaultListModel();
1044     }
1045     return iv_pageTypeModel;
1046 }
1047 /**
1048  * Set session ID
1049  * Creation date: (9/29/99 11:36:37 AM)
1050  */
1051 public String getSessionID() {
1052     return iv_sessionID;
1053 }
1054 /**
1055  * Insert the method's description here.
1056  * Creation date: (9/29/99 11:36:37 AM)
1057  */
1058 public JMenuItem getStatusbarMenuItem() {
1059     return iv_statusbarMenuItem;
1060 }
1061 /**
1062  * Return the StatusBarPane property value.
1063  * @return javax.swing.JPanel
1064  */
1065 private javax.swing.JPanel getStatusBarPane() {
1066     if (iv_statusBarPane == null) {
1067         try {
1068             iv_statusMsg = new javax.swing.JLabel();
1069             iv_statusMsg.setName("StatusMsg");
1070             iv_statusMsg.setBorder(new
1071 javax.swing.border.EtchedBorder());
1072             setStatusMessage("Welcome to the Franklin Editor");
1073
1074             iv_statusBarPane = new javax.swing.JPanel();
1075             iv_statusBarPane.setName("StatusBarPane");
1076             iv_statusBarPane.setLayout(new java.awt.BorderLayout());
1077             iv_statusBarPane.add(iv_statusMsg, "Center");
1078         } catch (java.lang.Throwable ivjExc) {
1079             handleException(ivjExc);
1080         }
1081     }
1082     return iv_statusBarPane;
1083 }

```

```

1084  /**
1085   * Insert the method's description here.
1086   * Creation date: (9/29/99 11:36:37 AM)
1087   */
1088  public JMenuItem getToolBarMenuItem() {
1089      return iv_toolbarMenuItem;
1090  }
1091  /**
1092   * Return the ToolBarPane property value.
1093   * @return javax.swing.JToolBar
1094   */
1095  private javax.swing.JToolBar getToolBarPane() {
1096      if (iv_toolbarPane == null) {
1097          try {
1098              // new
1099              iv_newButton = new javax.swing.JButton();
1100              iv_newButton.setName("NewButton");
1101              iv_newButton.setIcon(new
1102  javax.swing.ImageIcon(getClass().getResource("/images/new.gif")));
1103              iv_newButton.setText("");
1104              iv_newButton.setToolTipText("Create new fragment or page");
1105              iv_newButton.setMargin(new java.awt.Insets(0, 0, 0, 0));
1106
1107              iv_newButton.setHorizontalTextPosition(javax.swing.SwingConstants.CENTER)
1108  ;
1109
1110              iv_newButton.setVerticalTextPosition(javax.swing.SwingConstants.BOTTOM);
1111              iv_newButton.addActionListener(new ActionListener() {
1112                  public void actionPerformed(ActionEvent lv_e) {
1113                      newFragmentOrPage();
1114                  }
1115              });
1116
1117              // delete
1118              iv_deleteButton = new javax.swing.JButton();
1119              iv_deleteButton.setName("RemoveButton");
1120              iv_deleteButton.setIcon(new
1121  javax.swing.ImageIcon(getClass().getResource("/images/delete.gif")));
1122              iv_deleteButton.setText("");
1123              iv_deleteButton.setToolTipText("Remove current fragment or
1124  page");
1125              iv_deleteButton.setMargin(new java.awt.Insets(0, 0, 0, 0));
1126
1127              iv_deleteButton.setHorizontalTextPosition(javax.swing.SwingConstants.CENT
1128  ER);
1129
1130              iv_deleteButton.setVerticalTextPosition(javax.swing.SwingConstants.BOTTOM
1131  );
1132
1133              iv_deleteButton.addActionListener(new ActionListener() {
1134                  public void actionPerformed(ActionEvent lv_e) {
1135                      removeCurrentFragmentOrPage();
1136                  }
1137              });
1138
1139              // cut
1140              iv_cutButton = new javax.swing.JButton();

```

```

1141         iv_cutButton.setName("CutButton");
1142         iv_cutButton.setIcon(new
1143 javax.swing.ImageIcon(getClass().getResource("/images/cut.gif")));
1144         iv_cutButton.setText("");
1145         iv_cutButton.setToolTipText("Cut");
1146         iv_cutButton.setMargin(new java.awt.Insets(0, 0, 0, 0));
1147
1148         iv_cutButton.setHorizontalTextPosition(javax.swing.SwingConstants.CENTER)
1149 ;
1150
1151         iv_cutButton.setVerticalTextPosition(javax.swing.SwingConstants.BOTTOM);
1152         iv_cutButton.addActionListener(new ActionListener() {
1153             public void actionPerformed(ActionEvent lv_e) {
1154                 editCut();
1155             }
1156         });
1157
1158         // copy
1159         iv_copyButton = new javax.swing.JButton();
1160         iv_copyButton.setName("CopyButton");
1161         iv_copyButton.setIcon(new
1162 javax.swing.ImageIcon(getClass().getResource("/images/copy.gif")));
1163         iv_copyButton.setText("");
1164         iv_copyButton.setToolTipText("Copy");
1165         iv_copyButton.setMargin(new java.awt.Insets(0, 0, 0, 0));
1166
1167         iv_copyButton.setHorizontalTextPosition(javax.swing.SwingConstants.CENTER
1168 );
1169
1170         iv_copyButton.setVerticalTextPosition(javax.swing.SwingConstants.BOTTOM);
1171         iv_copyButton.addActionListener(new ActionListener() {
1172             public void actionPerformed(ActionEvent lv_e) {
1173                 editCopy();
1174             }
1175         });
1176
1177         // paste
1178         iv_pasteButton = new javax.swing.JButton();
1179         iv_pasteButton.setName("PasteButton");
1180         iv_pasteButton.setIcon(new
1181 javax.swing.ImageIcon(getClass().getResource("/images/paste.gif")));
1182         iv_pasteButton.setText("");
1183         iv_pasteButton.setToolTipText("Paste");
1184         iv_pasteButton.setMargin(new java.awt.Insets(0, 0, 0, 0));
1185
1186         iv_pasteButton.setHorizontalTextPosition(javax.swing.SwingConstants.CENTE
1187 R);
1188
1189         iv_pasteButton.setVerticalTextPosition(javax.swing.SwingConstants.BOTTOM)
1190 ;
1191         iv_pasteButton.addActionListener(new ActionListener() {
1192             public void actionPerformed(ActionEvent lv_e) {
1193                 editPaste();
1194             }
1195         });
1196
1197         // clear

```



```

1198         iv_clearButton = new javax.swing.JButton();
1199         iv_clearButton.setName("ClearButton");
1200         iv_clearButton.setText("");
1201         iv_clearButton.setToolTipText("Clear contents of edit form");
1202
1203         iv_clearButton.setHorizontalTextPosition(javax.swing.SwingConstants.CENTE
1204 R);
1205
1206         iv_clearButton.setVerticalTextPosition(javax.swing.SwingConstants.BOTTOM)
1207 ;
1208         iv_clearButton.setIcon(new
1209 javax.swing.ImageIcon(getClass().getResource("/images/clear.gif")));
1210         iv_clearButton.setMargin(new java.awt.Insets(0, 0, 0, 0));
1211
1212         iv_clearButton.addActionListener(new ActionListener() {
1213             public void actionPerformed(ActionEvent lv_e) {
1214                 clearCurrentFragmentOrPage();
1215             }
1216         });
1217
1218         // back
1219         iv_backButton = new javax.swing.JButton();
1220         iv_backButton.setName("BackButton");
1221         iv_backButton.setText("");
1222         iv_backButton.setToolTipText("Cycle back through
1223 fragments/pages");
1224
1225         iv_backButton.setHorizontalTextPosition(javax.swing.SwingConstants.CENTER
1226 );
1227
1228         iv_backButton.setVerticalTextPosition(javax.swing.SwingConstants.BOTTOM);
1229         iv_backButton.setIcon(new
1230 javax.swing.ImageIcon(getClass().getResource("/images/back.gif")));
1231         iv_backButton.setMargin(new java.awt.Insets(0, 0, 0, 0));
1232
1233         iv_backButton.addActionListener(new ActionListener() {
1234             public void actionPerformed(ActionEvent lv_e) {
1235                 back();
1236             }
1237         });
1238
1239         // forward
1240         iv_forwardButton = new javax.swing.JButton();
1241         iv_forwardButton.setName("ForwardButton");
1242         iv_forwardButton.setText("");
1243         iv_forwardButton.setToolTipText("Cycle forward through
1244 fragments/pages");
1245
1246         iv_forwardButton.setHorizontalTextPosition(javax.swing.SwingConstants.CEN
1247 TER);
1248
1249         iv_forwardButton.setVerticalTextPosition(javax.swing.SwingConstants.BOTTO
1250 M);
1251         iv_forwardButton.setIcon(new
1252 javax.swing.ImageIcon(getClass().getResource("/images/forward.gif")));
1253         iv_forwardButton.setMargin(new java.awt.Insets(0, 0, 0, 0));
1254

```

```

1255         iv_forwardButton.addActionListener(new ActionListener() {
1256             public void actionPerformed(ActionEvent lv_e) {
1257                 forward();
1258             }
1259         });
1260
1261         // checkin
1262         iv_checkinButton = new javax.swing.JButton();
1263         iv_checkinButton.setName("CheckinButton");
1264         iv_checkinButton.setText("");
1265         iv_checkinButton.setToolTipText("Checkin the current
1266 fragment/page");
1267
1268         iv_checkinButton.setHorizontalTextPosition(javax.swing.SwingConstants.CEN
1269 TER);
1270
1271         iv_checkinButton.setVerticalTextPosition(javax.swing.SwingConstants.BOTTO
1272 M);
1273         iv_checkinButton.setIcon(new
1274 javax.swing.ImageIcon(getClass().getResource("/images/checkin.gif")));
1275         iv_checkinButton.setMargin(new java.awt.Insets(0, 0, 0, 0));
1276
1277         iv_checkinButton.addActionListener(new ActionListener() {
1278             public void actionPerformed(ActionEvent lv_e) {
1279                 checkin();
1280             }
1281         });
1282
1283         // checkout
1284         iv_checkoutButton = new javax.swing.JButton();
1285         iv_checkoutButton.setName("CheckoutButton");
1286         iv_checkoutButton.setText("");
1287         iv_checkoutButton.setToolTipText("Checkout the selected
1288 fragment/page");
1289
1290         iv_checkoutButton.setHorizontalTextPosition(javax.swing.SwingConstants.CE
1291 NTER);
1292
1293         iv_checkoutButton.setVerticalTextPosition(javax.swing.SwingConstants.BOTT
1294 OM);
1295         iv_checkoutButton.setIcon(new
1296 javax.swing.ImageIcon(getClass().getResource("/images/checkout.gif")));
1297         iv_checkoutButton.setMargin(new java.awt.Insets(0, 0, 0, 0));
1298
1299         iv_checkoutButton.addActionListener(new ActionListener() {
1300             public void actionPerformed(ActionEvent lv_e) {
1301                 checkout();
1302             }
1303         });
1304
1305         // create toolbar
1306         iv_toolBarPane = new javax.swing.JToolBar();
1307         iv_toolBarPane.setName("ToolBarPane");
1308         iv_toolBarPane.add(iv_newButton,
1309 iv_newButton.getName());
1310         iv_toolBarPane.add(iv_deleteButton,
1311 iv_deleteButton.getName());

```

```

1312         iv_toolBarPane.addSeparator();
1313         iv_toolBarPane.add(iv_cutButton,
1314 iv_cutButton.getName());
1315         iv_toolBarPane.add(iv_copyButton,
1316 iv_copyButton.getName());
1317         iv_toolBarPane.add(iv_pasteButton,
1318 iv_pasteButton.getName());
1319         iv_toolBarPane.add(iv_clearButton,
1320 iv_clearButton.getName());
1321         iv_toolBarPane.addSeparator();
1322         iv_toolBarPane.add(iv_backButton,
1323 iv_backButton.getName());
1324         iv_toolBarPane.add(iv_forwardButton,
1325 iv_forwardButton.getName());
1326         iv_toolBarPane.addSeparator();
1327         iv_toolBarPane.add(iv_checkinButton,
1328 iv_checkinButton.getName());
1329         iv_toolBarPane.add(iv_checkoutButton,
1330 iv_checkoutButton.getName());
1331
1332         } catch (java.lang.Throwable ivjExc) {
1333             handleException(ivjExc);
1334         }
1335     }
1336     return iv_toolBarPane;
1337 }
1338 /**
1339  * Return the ViewMenu property value.
1340  * @return javax.swing.JMenu
1341  */
1342 /* WARNING: THIS METHOD WILL BE REGENERATED. */
1343 private javax.swing.JMenu getViewMenu() {
1344     if (iv_viewMenu == null) {
1345         try {
1346             iv_viewMenu = new javax.swing.JMenu();
1347             iv_viewMenu.setName("ViewMenu");
1348             iv_viewMenu.setText("View");
1349
1350             // StatusBarMenuItem
1351             iv_statusbarMenuItem = new javax.swing.JMenuItem();
1352             iv_statusbarMenuItem.setName("StatusBarMenuItem");
1353             iv_statusbarMenuItem.setText("StatusBar");
1354             iv_statusbarMenuItem.addActionListener(new ActionListener() {
1355                 public void actionPerformed(ActionEvent lv_e) {
1356                     viewStatusBar();
1357                 }
1358             });
1359
1360             // ToolbarMenuItem
1361             iv_toolbarMenuItem = new javax.swing.JMenuItem();
1362             iv_toolbarMenuItem.setName("ToolbarMenuItem");
1363             iv_toolbarMenuItem.setText("Toolbar");
1364             iv_toolbarMenuItem.addActionListener(new ActionListener() {
1365                 public void actionPerformed(ActionEvent lv_e) {
1366                     viewToolBar();
1367                 }
1368             });

```

```

1369
1370         // ForwardMenuItem
1371         iv_forwardMenuItem = new javax.swing.JMenuItem();
1372         iv_forwardMenuItem.setName("ForwardMenuItem");
1373         iv_forwardMenuItem.setText("Forward");
1374         iv_forwardMenuItem.addActionListener(new ActionListener() {
1375             public void actionPerformed(ActionEvent lv_e) {
1376                 forward();
1377             }
1378         });
1379
1380         // BackMenuItem
1381         iv_backMenuItem = new javax.swing.JMenuItem();
1382         iv_backMenuItem.setName("BackMenuItem");
1383         iv_backMenuItem.setText("Back");
1384         iv_backMenuItem.addActionListener(new ActionListener() {
1385             public void actionPerformed(ActionEvent lv_e) {
1386                 back();
1387             }
1388         });
1389
1390         // HistoryMenu
1391         iv_historyMenu = new javax.swing.JMenu();
1392         iv_historyMenu.setName("historyMenu");
1393         iv_historyMenu.setText("History");
1394
1395         iv_viewMenu.add(iv_statusbarMenuItem);
1396         iv_viewMenu.add(iv_toolbarMenuItem);
1397         iv_viewMenu.add(new JSeparator());
1398         iv_viewMenu.add(iv_backMenuItem);
1399         iv_viewMenu.add(iv_forwardMenuItem);
1400         iv_viewMenu.add(iv_historyMenu);
1401
1402         } catch (java.lang.Throwable ivjExc) {
1403             handleException(ivjExc);
1404         }
1405     }
1406     return iv_viewMenu;
1407 }
1408 /**
1409  * Called whenever the part throws an exception.
1410  * @param exception java.lang.Throwable
1411  */
1412 private void handleException(java.lang.Throwable lv_exception) {
1413     /* Uncomment the following lines to print uncaught exceptions to stdout
1414     */
1415     System.out.println("----- FranklinEditor.handleException-----");
1416     lv_exception.printStackTrace();
1417 }
1418 /**
1419  * Initialize the Franklin Editor UI. called from constructor of FranklinEditor
1420  */
1421
1422 public void initialize(TXDocument lv_initDocument) {
1423     try {
1424         Dispatcher.setFragmentAndPageTypes(this, lv_initDocument); //
1425         setup dtd related items

```

```

1426         iv_fragmentManager = new FragmentManager(this);    // create
1427 fragment manager
1428         setName("FranklinEditor");
1429
1430         setDefaultCloseOperation(javax.swing.WindowConstants.DISPOSE_ON_CLOSE);
1431 // need to logout +++++
1432         setJMenuBar(getFranklinEditorJMenuBar());           // menu bar
1433         setTitle("Franklin Editor");                         // window title
1434         setContentPane(getJFrameContentPane());             // now create the
1435 ui widgets after dtd set
1436
1437         Dimension screenSize = Toolkit.getDefaultToolkit().getScreenSize();
1438 // we call this twice (in main)
1439         /* Create the frame */
1440         pack(); // Pack frame on the screen
1441         setSize(800, 600);
1442
1443         /* Center frame on the screen */
1444         Dimension frameSize = getSize();
1445         if (frameSize.height > screenSize.height)
1446             frameSize.height = screenSize.height;
1447         if (frameSize.width > screenSize.width)
1448             frameSize.width = screenSize.width;
1449         setLocation((screenSize.width - frameSize.width) / 2,
1450                     (screenSize.height - frameSize.height) / 2);
1451         setVisible(true);
1452
1453         /* Add a windowListener for the windowClosingEvent */
1454         addWindowListener(new java.awt.event.WindowAdapter() {
1455             public void windowClosing(java.awt.event.WindowEvent e) {
1456                 System.exit(0);
1457             }
1458         });
1459     }
1460     catch (java.lang.Throwable ivjExc) {
1461         handleException(ivjExc);
1462     }
1463 }
1464 /**
1465  * Insert the method's description here.
1466  * Creation date: (10/11/99 6:25:59 PM)
1467  */
1468 public void loadAllDTDs() {
1469     Dispatcher.loadAllDTDs(this);
1470 }
1471 /**
1472  * Insert the method's description here.
1473  * Creation date: (10/7/99 9:27:02 AM)
1474  */
1475 public static void loadProperties() {
1476     Properties lv_props = new Properties();
1477     try {
1478         InputStream is =
1479 ClassLoader.getResourceAsStream("franklin.properties");
1480         lv_props.load(is);
1481         is.close();

```

```

1482         System.out.println("Loaded properties from franklin.properties: " +
1483 lv_props);
1484
1485         Class.forName("com.ibm.adtech.franklin.client.Dispatcher");        //
1486 make sure Dispatcher class is loaded
1487         String lv_value;
1488
1489         // cv_standaloneP = "true"
1490 lv_value = (String)(lv_props.get("standaloneP"));
1491 if ((lv_value != null) && !(lv_value.equals("")) {
1492         System.out.println("Property cv_standaloneP = " + lv_value);
1493         cv_standaloneP = (Boolean.valueOf(lv_value)).booleanValue();
1494     }
1495
1496     // cv_splashscreenP = "false"
1497 //lv_value = (String)(lv_props.get("splashscreenP"));
1498 //if ((lv_value != null) && !(lv_value.equals("")) {
1499 //    System.out.println("Property cv_splashscreenP = " +
1500 lv_value);
1501 //    cv_splashscreenP =
1502 (Boolean.valueOf(lv_value)).booleanValue();
1503 //}
1504
1505     // cv_server =
1506 "http://frasier.dhcp.adtech.internet.ibm.com/franklin/";
1507 //lv_value = (String)(lv_props.get("server"));
1508 //if ((lv_value != null) && !(lv_value.equals("")) {
1509 //    System.out.println("Property cv_server = " + lv_value);
1510 //    Dispatcher.cv_server = lv_value;
1511 //}
1512
1513     // cv_dispatcher = "http://9.242.61.42/franklin";        //
1514 dikran's server in southbury
1515 lv_value = (String)(lv_props.get("dispatcher"));
1516 if ((lv_value != null) && !(lv_value.equals("")) {
1517     System.out.println("Property cv_dispatcher = " + lv_value);
1518     Dispatcher.cv_dispatcher = lv_value;
1519 }
1520
1521     // cv_initXMLFile = "/xml/initXMLFile.xml";
1522 lv_value = (String)(lv_props.get("initXMLFile"));
1523 if ((lv_value != null) && !(lv_value.equals("")) {
1524     System.out.println("Property cv_initXMLFile = " + lv_value);
1525     Dispatcher.cv_initXMLFile = lv_value;
1526 }
1527 }
1528 catch (ClassNotFoundException lv_e) {
1529     System.out.println("loadProperties, ClassNotFoundException");
1530     lv_e.printStackTrace();
1531 }
1532 catch (IOException lv_e) {
1533     System.out.println("loadProperties, IOException");
1534     lv_e.printStackTrace();
1535 }
1536 catch (NullPointerException lv_e) {
1537     System.out.println("loadProperties, NullPointerException");
1538     lv_e.printStackTrace();

```

```

1539     }
1540 }
1541 }
1542 /**
1543  * Starts the application.
1544  * @param args an array of command-line arguments
1545  */
1546 public static void main(java.lang.String[] args) {
1547     try {
1548
1549         //UIManager.setLookAndFeel(UIManager.getSystemLookAndFeelClassName());
1550         // Set native look and feel
1551
1552         loadProperties(); // load
1553         properties from "franklin.properties" file
1554         Dispatcher.initialize(); //
1555         initialize Dispatcher
1556         FranklinEditor lv_editor = new FranklinEditor(); // create
1557         shell of editor first.. to save sessionID
1558         lv_editor.iv_screenSize =
1559         Toolkit.getDefaultToolkit().getScreenSize(); // Calculate the screen size
1560         new FranklinEditorLoginScreen(lv_editor);
1561         // create Login Screen
1562     }
1563     catch (Throwable exception) {
1564         System.err.println("Exception occurred in main() of
1565         FranklinEditor");
1566         exception.printStackTrace(System.out);
1567     }
1568 }
1569 /**
1570  * put up dialog to create a new fragment or page
1571  * Creation date: (9/29/99 11:36:37 AM)
1572  */
1573 public void newFragmentOrPage() {
1574     System.out.println("newFragmentOrPage");
1575     if (iv_typeDialog == null) {
1576         iv_typeDialog = new FranklinEditorTypeDialog(this, true);
1577     }
1578     iv_typeDialog.setVisible(true);
1579 }
1580 /**
1581  * Insert the method's description here.
1582  * Creation date: (10/7/99 2:22:35 PM)
1583  * @param lv_string java.lang.String
1584  */
1585 public static void printDebug(String lv_string) {
1586     if (cv_debug)
1587         System.out.println(lv_string);
1588 }
1589 /**
1590  * This is called after a fragment or page is created or the user
1591  * clicks on the history back/forward buttons.
1592  * The method replaces the pane in the right side of the editor.
1593  * Creation date: (10/7/99 7:06:54 PM)
1594  */
1595 public void redisplayEditorPane() {

```

```

1596 ClientFragment lv_fragment = iv_fragmentManager.getCurrentFragment();
1597 if (lv_fragment != null) {
1598     if (lv_fragment.iv_pane != null) {
1599         Container lv_parent = iv_editorPane.getParent();
1600         lv_parent.remove(iv_editorPane);
1601         lv_parent.add(lv_fragment.iv_pane, "right");
1602         iv_editorPane = lv_fragment.iv_pane;
1603         iv_editorPane.invalidate();
1604         doLayout();
1605         setStatusMessage("Switching to fragment " + lv_fragment);
1606     }
1607     else {
1608         setStatusMessage("No interface exists for fragment " +
1609 lv_fragment);
1610     }
1611 }
1612 else if (iv_editorPane != iv_noPane) {
1613     // remove the last pane and replace with one that indicates no
1614 current element
1615     Container lv_parent = iv_editorPane.getParent();
1616     lv_parent.remove(iv_editorPane);
1617     lv_parent.add(iv_noPane, "right");
1618     iv_editorPane = iv_noPane;
1619     iv_editorPane.invalidate();
1620     doLayout();
1621     setStatusMessage("History list is empty");
1622 }
1623 }
1624 /**
1625  * Insert the method's description here.
1626  * Creation date: (10/11/99 6:07:36 PM)
1627  */
1628 private void reloadDTDs() {
1629     iv_fragmentTypeModel.clear();
1630     iv_pageTypeModel.clear();
1631     Dispatcher.reloadDTDs(this);
1632 }
1633 /**
1634  * remove the current fragment or page from the UI
1635  * may need to unlock fragment on server
1636  * // +++ dialog to confirm deletion
1637  * Creation date: (9/29/99 11:36:37 AM)
1638  */
1639 public void removeCurrentFragmentOrPage() {
1640     System.out.println("removeCurrentFragmentOrPage");
1641     ClientFragment lv_fragment = iv_fragmentManager.getCurrentFragment();
1642     if (lv_fragment != null) {
1643         if ((lv_fragment.getLock() != null) &&
1644             (!(lv_fragment.getLock().equals("")))) {
1645             boolean lv_status = Dispatcher.unlock(getSessionID(),
1646 lv_fragment);
1647             // this setStatusMessage will be overwritten by redisplay
1648 message
1649             if (lv_status) setStatusMessage("Fragment " + lv_fragment + "
1650 unlocked");
1651             else setStatusMessage("Error unlocking fragment " +
1652 lv_fragment);

```



```

1653         }
1654         iv_fragmentManager.removeFragment(lv_fragment);
1655         iv_historyMenu.remove(lv_fragment.getMenuItem()); // remove from
1656 history menu
1657         redisplayEditorPane(); // redisplay
1658 current ClientFragment
1659     }
1660 }
1661 /**
1662  * remove a fragment or page from the UI
1663  * may need to unlock fragment on server
1664  * Creation date: (9/29/99 11:36:37 AM)
1665  */
1666 public void removeFragmentOrPage(ClientFragment lv_fragment) {
1667     System.out.println("removeFragmentOrPage");
1668     if (lv_fragment != null) {
1669         // +++ dialog to confirm deletion
1670         //String lv_status = Dispatcher.unlockFragment(lv_fragment);
1671         //setStatusMessage(lv_status); // this will
1672 be overwritten by redisplay message
1673         iv_fragmentManager.removeFragment(lv_fragment);
1674         iv_historyMenu.remove(lv_fragment.getMenuItem()); // remove from
1675 history menu
1676         redisplayEditorPane(); // redisplay
1677 current ClientFragment
1678     }
1679 }
1680 /**
1681  * Insert the method's description here.
1682  * Creation date: (10/8/99 11:15:52 AM)
1683  */
1684 public void search() {
1685     setStatusMessage("No search yet");
1686 }
1687 /**
1688  * Set session ID
1689  * Creation date: (9/29/99 11:36:37 AM)
1690  */
1691 public void setSessionID(String lv_id) {
1692     iv_sessionID = lv_id;
1693 }
1694 /**
1695  * Insert the method's description here.
1696  * Creation date: (9/29/99 11:36:37 AM)
1697  */
1698 public void setStatusMessage(String lv_message) {
1699     iv_statusMsg.setText(lv_message);
1700 }
1701 public void showAboutBox() {
1702     /* Create the AboutBox dialog */
1703     FranklinEditorAboutBox aFranklinEditorAboutBox = new
1704 FranklinEditorAboutBox();
1705     Dimension dialogSize = aFranklinEditorAboutBox.getPreferredSize();
1706     Dimension frameSize = getSize();
1707     Point loc = getLocation();
1708     aFranklinEditorAboutBox.setLocation((frameSize.width - dialogSize.width)
1709 / 2 + loc.x, (frameSize.height - dialogSize.height) / 2 + loc.y);

```

```

1710         aFranklinEditorAboutBox.setModal(true);
1711         aFranklinEditorAboutBox.show();
1712     }
1713     /**
1714      * Insert the method's description here.
1715      * Creation date: (10/8/99 11:15:52 AM)
1716      */
1717     public void showHelpTopics() {
1718         setStatusMessage("No Help topics yet");
1719     }
1720     /**
1721      * Given a message string, show this in a modal dialog
1722      * @param lv_message java.lang.String
1723      */
1724     public void showMessageDialog(String lv_message, int lv_messageType) {
1725         JOptionPane.showMessageDialog(this, lv_message, "Franklin Editor Message",
1726 lv_messageType);
1727     }
1728     /**
1729      * This method was created in VisualAge.
1730      * @param lv_count int
1731      */
1732     public void updateCount(int lv_count) {
1733         String lv_stringCount = Integer.toString(lv_count);
1734         iv_countLabel.setText(lv_stringCount + " ");
1735     }
1736     public void viewStatusBar() {
1737         /* Hide or show the statusbar */
1738         getStatusBarPane().setVisible(!(getStatusBarPane().isVisible()));
1739     }
1740     public void viewToolBar() {
1741         /* Hide or show the toolbar */
1742         getToolBarPane().setVisible(!(getToolBarPane().isVisible()));
1743     }
1744 }

```

```

1  package com.ibm.adtech.franklin.client;
2
3  import org.w3c.dom.NodeList;
4  import org.w3c.dom.Node;
5  import com.ibm.xml.parser.AttDef;
6  import com.ibm.xml.parser.ContentModel;
7  import com.ibm.xml.parser.CMNode;
8  import com.ibm.xml.parser.CM1op;
9  import com.ibm.xml.parser.CM2op;
10 import com.ibm.xml.parser.CMLeaf;
11 import com.ibm.xml.parser.DTD;
12 import com.ibm.xml.parser.InsertableElement;
13 import com.ibm.xml.parser.ElementDecl;
14 import com.ibm.xml.parser.TXDocument;
15 import com.ibm.xml.parser.TXElement;
16 import java.util.Enumeration;
17 import java.util.Vector;
18 import java.util.Hashtable;
19 import javax.swing.*;
20 import javax.swing.JPanel;
21 import javax.swing.text.*;
22 import java.awt.*;
23 import java.awt.BorderLayout;
24 //import java.awt.event.TextListener;
25 import javax.swing.event.DocumentListener;
26 import javax.swing.event.DocumentEvent;
27 //import javax.swing.event.TextListener;
28 import java.awt.event.ActionEvent;
29
30 /**
31  * Insert the type's description here.
32  * Creation date: (10/11/99 1:29:12 PM)
33  * @author:
34  */
35 public class InterfaceMaker {
36
37  /**
38   * for SKIP elements, we want to process children only to put them into the
39   Document
40   * no ui to worry about here. we know we are under a SKIP node
41   * we have to make sure we don't add PCDATA nodes to tree.
42   *
43   * Creation date: (11/04/99)
44   */
45  public static void createInterfaceElementsOnly(DTD lv_dtd, CMNode lv_cmNode,
46  TXDocument lv_document, Node lv_docElement) {
47      //System.out.println("createInterfaceElementsOnly (" + lv_cmNode + ")");
48      String lv_labelBase = lv_cmNode.toString();
49
50      if (lv_cmNode == null) {                                     // not
51  a MODEL_GROUP, ie ANY or EMPTY
52          System.out.println("createInterfaceElementsOnly: not a model_group
53  " + lv_cmNode);
54      }
55      else { // this could be a #PCDATA node or some Element. we don't want to
56  create UIs for PCDATA

```

```

57         if ((lv_cmNode instanceof CM1op) && ((CM1op)lv_cmNode).getNode()
58 instanceof CMLeaf) { // with qualifiers
59             CMNode lv_tmpNode = ((CM1op)lv_cmNode).getNode();
60             if (!((CMLeaf)lv_tmpNode).getName().equals("#PCDATA")) {
61                 createInterfaceElementsOnlyAux(lv_dtd, lv_cmNode,
62 lv_document, lv_docElement);
63             }
64         }
65         else if (lv_cmNode instanceof CMLeaf)
66         {
67             // no qualifiers
68             if (!((CMLeaf)lv_cmNode).getName().equals("#PCDATA")) {
69                 createInterfaceElementsOnlyAux(lv_dtd, lv_cmNode,
70 lv_document, lv_docElement);
71             }
72         }
73         else
74         {
75             // go recursive
76             createInterfaceElementsOnly(lv_dtd,
77 ((CM2op)lv_cmNode).getLeft(), lv_document, lv_docElement);
78             createInterfaceElementsOnly(lv_dtd,
79 ((CM2op)lv_cmNode).getRight(), lv_document, lv_docElement);
80         }
81     }
82 /**
83  * for SKIP elements, we want to process children only to put them into the
84 Document
85  * no ui to worry about here. we know we are under a SKIP node
86  * we have to make sure we don't add PCDATA nodes to tree.
87  *
88  * Creation date: (11/04/99)
89  */
90 public static void createInterfaceElementsOnlyAux(DTD lv_dtd, CMNode lv_cmNode,
91 TXDocument lv_document, Node lv_docElement) {
92     //System.out.println("createInterfaceElementsOnlyAux (" + lv_cmNode +
93 ")");
94     String lv_labelBase = "";
95     if ((lv_cmNode instanceof CM1op) && ((CM1op)lv_cmNode).getNode()
96 instanceof CMLeaf) {
97         lv_labelBase = ((CM1op)lv_cmNode).getNode().toString();
98     }
99     else {
100         lv_labelBase = lv_cmNode.toString();
101     }
102
103     TXElement lv_newElement =
104 (TXElement)(lv_document.createElement(lv_labelBase));
105     lv_docElement.appendChild(lv_newElement);
106     lv_docElement = lv_newElement;
107     ContentModel lv_contentModel = lv_dtd.getContentModel(lv_labelBase);
108     if (lv_contentModel != null) {
109         CMNode lv_contentModelNode = lv_contentModel.getContentModelNode();
110         createInterfaceElementsOnly(lv_dtd, lv_contentModelNode,
111 lv_document, lv_docElement);
112     }
113 }

```

```

114 /**
115  * For the given DTD and content model node, create appropriate input widgets
116  and add to the JPanel.
117  * Make sure that the docElement stays in sync with the widgets in the UI.
118  * The docElement is the parent of the children described in the model sent in.
119  * <br>
120  * This means look at the attribute DATATYPE on the node and see what the type
121  is (one of uitypes.txt)
122  * DATE | INTEGER | STRING | SHORTTEXT | LONGTEXT | CHOICE
123  * Also, we need to check whether the element has children and if the children
124  should be displayed
125  * For example, BODY has PARAGRAPH children. but the paragraph children are not
126  displayed.
127  * For example, RELATEDLINK has children URL and LINKTITLE.
128  * Here the relatedlink is only a title. URL and LINKTITLE are subtitles and
129  have UI input widgets.
130  * Also, associate that element in the xml DOM with the newly created input
131  widget.
132  *
133  * Creation date: (10/11/99 1:31:41 PM)
134  */
135 public static void createInterfaceForModel(DTD lv_dtd, ClientFragment
136 lv_fragment, JPanel lv_pane, CMNode lv_cmNode, TXDocument lv_document, Node
137 lv_docElement) {
138
139     if (lv_cmNode == null) {                                     // not
140 a MODEL_GROUP, ie ANY or EMPTY
141         System.out.println("createInterfaceForModel: not a model_group " +
142 lv_cmNode);
143     }
144     else {
145         if ((lv_cmNode instanceof CMlop) && ((CMlop)lv_cmNode).getNode()
146 instanceof CMLeaf) { // has qualifiers '*' or '+' or '?'
147             createInterfaceWithQualifiers(lv_dtd, lv_fragment, lv_pane,
148 lv_cmNode, lv_document, lv_docElement);
149         }
150         else if (lv_cmNode instanceof CMLeaf) {
151             // this could be a #PCDATA node or some Element. we don't
152 want to create UIs for PCDATA
153             if (!(((CMLeaf)lv_cmNode).getName().equals("#PCDATA"))) {
154                 createInterfaceWithoutQualifiers(lv_dtd, lv_fragment,
155 lv_pane, lv_cmNode, lv_document, lv_docElement); // no qualifiers (*, + or ?)
156             }
157         }
158         else
159         {
160             // go recursive
161             createInterfaceForModel(lv_dtd, lv_fragment, lv_pane,
162 ((CM2op)lv_cmNode).getLeft(), lv_document, lv_docElement);
163             createInterfaceForModel(lv_dtd, lv_fragment, lv_pane,
164 ((CM2op)lv_cmNode).getRight(), lv_document, lv_docElement);
165         }
166     }
167 }
168 /**
169  * We have a content model without any qualifiers. (no *, + or ?)
170  * Add child node to docElement.

```

```

171  * Link docElement with UI
172  *
173  * Creation date: (11/04/99)
174  */
175  public static void createInterfaceWithoutQualifiers(DTD lv_dtd, ClientFragment
176  lv_fragment, JPanel lv_pane, CMNode lv_cmNode, TXDocument lv_document, Node
177  lv_docElement) {
178      System.out.println("ContentType 2 is (" + lv_cmNode + ")");
179      String lv_label      = "";
180      String lv_labelBase = lv_cmNode.toString();
181      JPanel lv_myPane     = new JPanel();
182      JLabel lv_labelPane = new JLabel("", SwingConstants.RIGHT);
183      JComponent lv_component = null;
184      lv_myPane.setLayout(new BorderLayout());
185      lv_labelPane.setVerticalAlignment(SwingConstants.TOP);
186      lv_labelPane.setFont(FranklinEditor.cv_labelFont);
187      lv_labelPane.setPreferredSize(new
188  Dimension(FranklinEditor.cv_fragmentLabelWidth,
189  FranklinEditor.cv_fragmentTitleHeight));
190
191      // create the element and add to document
192      TXElement lv_newElement =
193  (TXElement)(lv_document.createElement(lv_labelBase));
194      lv_docElement.appendChild(lv_newElement);
195
196      // skip if SYSTEM or SPECIAL (only need to check SPECIAL here cus its
197  without a qualifier)
198      if (!skipElement(lv_labelBase) && !skipNonDisplayElement(lv_labelBase)) {
199          lv_label = lv_labelBase + " (req)";
200          lv_labelPane.setText(lv_label);
201          lv_pane.add(lv_myPane);
202          lv_myPane.add(lv_labelPane, "West");
203          lv_component = getInputWidget(lv_dtd, lv_fragment, lv_newElement,
204  true);
205          lv_component.setBackground(Color.red);
206      }
207      if (lv_component == null) { // if we skipped it or no widget
208  at this level, go into model of children
209          ContentModel lv_contentModel =
210  lv_dtd.getContentModel(lv_labelBase);
211          if (lv_contentModel != null) {
212              CMNode lv_contentModelNode =
213  lv_contentModel.getContentModelNode();
214              if (skipElement(lv_labelBase))
215  { // for SYSTEM
216                  createInterfaceElementsOnly(lv_dtd, lv_contentModelNode,
217  lv_document, lv_newElement);
218              }
219              else {
220                  createInterfaceForModel(lv_dtd, lv_fragment, lv_pane,
221  lv_contentModelNode, lv_document, lv_newElement);
222              }
223          }
224      }
225      else {
226          lv_myPane.add(lv_component, "Center");
227      }

```

```

228 }
229 /**
230  * We have a content model that contains qualifiers '*' or '+' or '?'
231  *
232  * Then associate that element in the xml DOM with the newly created input
233  widget
234  * Creation date: (10/11/99 1:31:41 PM)
235  */
236 public static void createInterfaceWithQualifiers(DTD lv_dtd, ClientFragment
237 lv_fragment, JPanel lv_pane, CMNode lv_cmNode, TXDocument lv_document, Node
238 lv_docElement) {
239     String lv_label = "";
240     String lv_labelBase = "";
241     String lv_qualifier = "";
242     JPanel lv_myPane = new JPanel();
243     JLabel lv_labelPane = new JLabel("", SwingConstants.RIGHT);
244     JComponent lv_component = null;
245     lv_myPane.setLayout(new BorderLayout());
246     lv_labelPane.setVerticalAlignment(SwingConstants.TOP);
247     lv_labelPane.setFont(FranklinEditor.cv_labelFont);
248     lv_labelPane.setPreferredSize(new
249 Dimension(FranklinEditor.cv_fragmentLabelWidth,
250 FranklinEditor.cv_fragmentTitleHeight));
251
252     CM1op lv_cs1 = (CM1op)lv_cmNode;
253     System.out.println("ContentType 1 is (" + lv_cs1.getNode() + ")" + (char)
254 lv_cs1.getType());
255     lv_labelBase = lv_cs1.getNode().toString();
256     lv_qualifier = String.valueOf((char) lv_cs1.getType());
257
258     // create the element and add to document
259     TXElement lv_newElement =
260 (TXElement)(lv_document.createElement(lv_labelBase));
261     lv_docElement.appendChild(lv_newElement);
262
263     if (!skipElement(lv_labelBase)) { // is this an
264 element to skip
265         lv_component = getInputWidget(lv_dtd, lv_fragment, lv_newElement,
266 false); // returns null if no DATATYPE attribute
267         if (lv_qualifier.equals("*")) {
268             lv_label = lv_labelBase + " (0+)";
269             MoreOrLess lv_moreOrLess = new MoreOrLess(lv_labelBase,
270 lv_newElement, lv_component);
271             lv_myPane.add(lv_moreOrLess, "Center");
272         }
273         else if (lv_qualifier.equals("+")) { //
274             lv_label = lv_labelBase + " (1+)";
275             MoreOrLess lv_moreOrLess = new MoreOrLess(lv_labelBase,
276 lv_newElement, lv_component);
277             lv_myPane.add(lv_moreOrLess, "Center");
278         }
279         else if (lv_qualifier.equals("?")) {
280             lv_label = lv_labelBase + " (opt)";
281             if (!(lv_component == null)) lv_myPane.add(lv_component,
282 "Center");
283         }
284         else {

```

```

285         lv_label = lv_labelBase + (char) lv_cs1.getType(); // ???
286 +++++
287         if (!(lv_component == null)) lv_myPane.add(lv_component,
288 "Center");
289     }
290     lv_pane.add(lv_myPane); // add new
291 pane to ongoing set of widgets
292     lv_labelPane.setText(lv_label);
293     lv_myPane.add(lv_labelPane, "West");
294     if (lv_component == null) { // no
295 component for this level but children have component
296         ContentModel lv_contentModel =
297 lv_dtd.getContentModel(lv_labelBase);
298         if (lv_contentModel != null) {
299             CMNode lv_contentModelNode =
300 lv_contentModel.getContentModelNode();
301             if (skipElement(lv_labelBase))
302 { // for CLIENT or SYSTEM
303                 createInterfaceElementsOnly(lv_dtd,
304 lv_contentModelNode, lv_document, lv_newElement);
305             }
306             else {
307                 createInterfaceForModel(lv_dtd, lv_fragment,
308 lv_pane, lv_contentModelNode, lv_document, lv_newElement);
309             }
310         }
311     }
312 }
313 }
314 /**
315  * return a JComponent that will be for the DTD element lv_elementName
316  * Only if there is an attribute of cv_DATATYPE do we actually want to create a
317 widget
318  * if there is an attribute called cv_CHOICES, then we need to produce a choice
319 widget
320  * also, save the widget in the ui hashtable. the key is the element from the
321 DOM
322  * Creation date: (10/12/99 12:50:12 PM)
323  * @param lv_dtd com.ibm.xml.parser.DTD
324  * @param lv_elementName java.lang.String
325  */
326 public static JComponent getInputWidget(DTD lv_dtd, ClientFragment lv_fragment,
327 Node lv_element, boolean lv_required) {
328     String lv_elementName = lv_element.getNodeName();
329     AttDef lv_attDef = null;
330     AttDef lv_attChoiceDef = null;
331     JComponent lv_component = null;
332     JScrollPane lv_scroll = null;
333
334     System.out.println("getInputWidget: lv_elementName=" + lv_elementName);
335     lv_attDef = lv_dtd.getAttributeDeclaration(lv_elementName,
336 FranklinEditor.cv_DATATYPE);
337     lv_attChoiceDef = lv_dtd.getAttributeDeclaration(lv_elementName,
338 FranklinEditor.cv_CHOICES);
339
340     if (lv_attDef != null) { // have ELEMENT that has DATATYPE attribute,
341 ie we want a UI widget

```



```

342         String lv_attValue = lv_attDef.getDefaultStringValue();
343         if (lv_attValue != null) {
344             if (lv_attChoiceDef != null) {                                     //
345 CHOICE
346                 Enumeration lv_elem = lv_attChoiceDef.elements();
347                 lv_component = getInputWidgetChoice(lv_elem,
348 lv_required);
349             }
350             else {                                                             //
351 DATE, INTEGER, STRING, SHORTTEXT, LONGTEXT
352                 lv_component = getInputWidgetText(lv_attValue,
353 lv_required);
354             }
355         }
356         else {                                                                // this shouldn't be run...only if
357 haven't accounted for attribute
358             System.out.println("getInputWidget: *** Shouldn't be called,
359 value of DATATYPE for UI is null *** " + lv_elementName);
360         }
361         lv_fragment.putInterface(lv_element, lv_component);    // if
362 lv_component is not null add to UI hashtable
363         lv_scroll = new JScrollPane(lv_component);
364     }
365     return lv_scroll;
366 }
367 /**
368  * this getInputWidgetChoice is explicitly for the CHOICE datatype.
369  * return a JComboBox for this choice with all the possible choices added
370  * lv_required means that this widget is required in the DTD... so visually
371 distinguish it by
372  * changing its background
373  *
374  * Creation date: (10/12/99 12:50:12 PM)
375  * @param lv_dtd com.ibm.xml.parser.DTD
376  * @param lv_elementName java.lang.String
377  */
378 public static JComponent getInputWidgetChoice(Enumeration lv_choices, boolean
379 lv_required) {
380     //System.out.println("getInputWidgetChoice");
381     JComponent lv_component = null;
382
383     DefaultComboBoxModel lv_model = new DefaultComboBoxModel();
384     while (lv_choices.hasMoreElements()) {
385         String lv_choice = (String)lv_choices.nextElement();
386         lv_model.addElement(lv_choice);
387     }
388     lv_component = new JComboBox(lv_model);
389     if (lv_required) {
390         lv_component.setBackground(FranklinEditor.cv_requiredInputColor);
391         ((JComboBox)lv_component).addActionListener(new
392 java.awt.event.ActionListener() {
393             public void actionPerformed(ActionEvent lv_e) {
394                 // if the value is the first element of the combobox
395 (ie, its the default), then color it inputRequired
396                 DefaultComboBoxModel lv_model =
397 (DefaultComboBoxModel)((JComboBox)lv_e.getSource()).getModel();

```

```

398             if(lv_model.getSelectedItem() ==
399 lv_model.getElementAt(0)) {
400
401         ((JComboBox)lv_e.getSource()).setBackground(FranklinEditor.cv_requiredInp
402 utColor);
403
404             }
405             else {
406
407         ((JComboBox)lv_e.getSource()).setBackground(FranklinEditor.cv_inputColor)
408 ;
409
410             }
411         });
412     }
413     return lv_component;
414 }
415 /**
416  * return a JComponent that corresponds to the DATATYPE default value lv_type
417  * this method only knows about DATE, INTEGER, STRING, SHORTTEXT, LONGTEXT
418  * added addDocumentListener to change highlighting of the widget if it is
419  * required and user adds/deletes content
420  *
421  * Creation date: (10/12/99 12:50:12 PM)
422  * @param lv_dtd com.ibm.xml.parser.DTD
423  * @param lv_elementName java.lang.String
424  */
425 public static JComponent getInputWidgetText(String lv_uitype, boolean
lv_required) {
426     //System.out.println("getInputWidget: lv_type = " + lv_uitype);
427     JComponent lv_component = null;
428
429     // we have a valid uitype one of DATE, INTEGER, STRING, SHORTTEXT,
430 LONGTEXT
431     if (lv_uitype != null && !(lv_uitype.equals("")))
432     {
433         // one liner
434         if (lv_uitype.equals("DATE") ||
435 lv_uitype.equals("INTEGER") ||
436 lv_uitype.equals("STRING")) {
437             lv_component = new JTextField();
438             lv_component.setPreferredSize(new
439 Dimension(FranklinEditor.cv_fragmentTextWidth,
440 FranklinEditor.cv_fragmentTitleHeight));
441
442             lv_component.setBorder(BorderFactory.createLineBorder(Color.black));
443
444             ((JTextField)lv_component).getDocument().putProperty("View",
445 lv_component);
446
447             if (lv_required) {
448
449         lv_component.setBackground(FranklinEditor.cv_requiredInputColor);
450
451             ((JTextField)lv_component).getDocument().addDocumentListener(new
452 DocumentListener() {
453
454                 public void changedUpdate(DocumentEvent

```

```

454         public void insertUpdate(DocumentEvent
455 lv_e) {
456             if (lv_e.getDocument().getLength() >
457 0) {
458                 //System.out.println("clear
459 color to white " + FranklinEditor.cv_inputColor);
460
461                 ((JTextField)lv_e.getDocument().getProperty("View")).setBackground(Frankl
462 inEditor.cv_inputColor);
463             }
464         }
465         public void removeUpdate(DocumentEvent
466 lv_e) {
467             if (lv_e.getDocument().getLength() ==
468 0) {
469                 //System.out.println("setting
470 color to red " + FranklinEditor.cv_requiredInputColor);
471
472                 ((JTextField)lv_e.getDocument().getProperty("View")).setBackground(Frankl
473 inEditor.cv_requiredInputColor);
474             }
475         }
476     });
477 }
478 }
479     else if (lv_uitype.equals("SHORTTEXT")) {
480         lv_component = new JTextArea(3,30);
481         ((JTextArea)lv_component).setLineWrap(true);
482
483         lv_component.setBorder(BorderFactory.createLineBorder(Color.black));
484         ((JTextArea)lv_component).getDocument().putProperty("View",
485 lv_component);
486         if (lv_required) {
487
488             lv_component.setBackground(FranklinEditor.cv_requiredInputColor);
489
490             ((JTextArea)lv_component).getDocument().addDocumentListener(new
491 DocumentListener() {
492                 public void changedUpdate(DocumentEvent
493 lv_e) { }
494                 public void insertUpdate(DocumentEvent
495 lv_e) {
496                     if (lv_e.getDocument().getLength() >
497 0) {
498
499                         ((JTextArea)lv_e.getDocument().getProperty("View")).setBackground(Frankli
500 nEditor.cv_inputColor);
501                     }
502                 }
503                 public void removeUpdate(DocumentEvent
504 lv_e) {
505                     if (lv_e.getDocument().getLength() ==
506 0) {
507
508                         ((JTextArea)lv_e.getDocument().getProperty("View")).setBackground(Frankli
509 nEditor.cv_requiredInputColor);
510                     }

```

```

511         }
512     });
513 }
514 }
515     else if (lv_uitype.equals("LONGTEXT"))
516 {
517         // large text area
518         lv_component = new JTextArea(30,30);
519         ((JTextArea)lv_component).setLineWrap(true);
520         lv_component.setBorder(BorderFactory.createLineBorder(Color.black));
521         ((JTextArea)lv_component).getDocument().putProperty("View",
522 lv_component);
523         if (lv_required) {
524             lv_component.setBackground(FranklinEditor.cv_requiredInputColor);
525             ((JTextArea)lv_component).getDocument().addDocumentListener(new
526 DocumentListener() {
527                 public void changedUpdate(DocumentEvent
528 lv_e) { }
529                 public void insertUpdate(DocumentEvent
530 lv_e) {
531                     if (lv_e.getDocument().getLength() >
532 0) {
533                         ((JTextArea)lv_e.getDocument().getProperty("View")).setBackground(Frankli
534 nEditor.cv_inputColor);
535                     }
536                 }
537                 public void removeUpdate(DocumentEvent
538 lv_e) {
539                     if (lv_e.getDocument().getLength() ==
540 0) {
541                         ((JTextArea)lv_e.getDocument().getProperty("View")).setBackground(Frankli
542 nEditor.cv_requiredInputColor);
543                     }
544                 }
545             });
546         }
547     }
548 }
549 }
550 }
551 }
552     else {
553         System.out.println("getInputWidget: *** Unknown type *** " +
554 lv_uitype);
555         return null;
556     }
557     return lv_component;
558 }
559 return null;
560 }
561 /**
562  * Given a dtd, return a JPanel that will allow the user to edit the fields.
563  * the title coming in will be the name of the xml document to create
564  * assumes that the dtd has a SYSTEM and CLIENT tag that are ignored.
565  * and that it has a SPECIAL tag that are the elements special to this dtd type
566  *
567  * Creation date: (10/11/99 1:31:41 PM)

```

```

568  */
569  public static JPanel getInterface(DTD lv_dtd, ClientFragment lv_fragment) {
570      String      lv_stuff      = "";
571      JPanel      lv_currentPanel  = new JPanel();
572      JPanel      lv_currentInputPanel = new JPanel();
573      JPanel      lv_titlePane    = new JPanel();
574      JLabel      lv_title        = new JLabel(lv_fragment.toString(),
575      SwingConstants.RIGHT);
576      lv_currentPanel.setLayout(new BorderLayout());
577      lv_currentInputPanel.setLayout(new BoxLayout(lv_currentInputPanel,
578      BoxLayout.Y_AXIS));
579      lv_title.setFont(FranklinEditor.cv_titleFont);
580      lv_title.setPreferredSize(new
581      Dimension(FranklinEditor.cv_fragmentLabelWidth,
582      FranklinEditor.cv_fragmentTitleHeight));
583      lv_titlePane.setLayout(new BorderLayout());
584      lv_titlePane.add(lv_title, "West");
585      lv_currentPanel.add(lv_titlePane, "North");
586      lv_currentPanel.add(lv_currentInputPanel, "Center");
587
588      if (lv_dtd == null) {
589          lv_stuff = "Error reading DTD for " + lv_fragment;
590          lv_currentPanel.add((new JLabel(lv_stuff, SwingConstants.LEFT)),
591          "Center");
592      }
593      else {
594          // get all the UNIVERSAL elements and add to UI
595          // (ie, those under the top level element.
596          // not under SPECIAL, SYSTEM or CLIENT tags)
597          ElementDecl lv_dtdElement = DTDUtil.getRootElement(lv_dtd);
598          TXElement   lv_docElement = lv_fragment.getRootElement();
599          ContentModel lv_contentModel =
600      lv_dtd.getContentModel(lv_dtdElement.getName());
601          CMNode      lv_contentModelNode =
602      lv_contentModel.getContentModelNode();
603
604          TXDocument   lv_document      = lv_fragment.lv_document;
605          //
606          // ensureModelInDoc will make sure that all DTD model elements are
607      in document Root with default values
608          // this will add the SYSTEM, CLIENT, all universal tags, and
609      special children elements
610          createInterfaceForModel(lv_dtd, lv_fragment, lv_currentInputPanel,
611      lv_contentModelNode, lv_document, lv_docElement);
612          lv_currentInputPanel.add(Box.createVerticalGlue());
613          System.out.println("");
614
615          // get all the SPECIAL elements and add to UI
616          //lv_DTDElement = DTDUtil.getNamedElement(lv_dtd,
617      FranklinEditor.cv_SPECIAL_ELEMENT);
618          //lv_docElement =
619      lv_fragment.getNamedElement(FranklinEditor.cv_SPECIAL_ELEMENT);
620          //lv_contentModelNode = getContentModelNode(lv_dtd,
621      lv_DTDElement.getNodeName());
622          //createInterfaceForModel(lv_dtd, lv_currentInputPanel,
623      lv_contentModelNode, lv_docElement);
624

```

```

625     }
626     return lv_currentPanel;
627 }
628 /**
629  * get the real component that is where the content is stored in the ui
630  * get the widget so we can update the element in the DOM
631  * @return javax.swing.JComponent
632  * @param lv_component javax.swing.JComponent
633  */
634 public static JComponent getInterfaceComponent(JComponent lv_component) {
635     if (lv_component == null) return null;
636     if (lv_component instanceof JComboBox) return lv_component;
637     else {
638         Component[] lv_components = lv_component.getComponents();
639         return (JComponent)lv_components[0];
640     }
641 }
642 /**
643  * return the More or Less widget for this element
644  * @return javax.swing.JPanel
645  * @param lv_label java.lang.String
646  */
647 public static JPanel getMoreOrLess(String lv_label) {
648     return null;
649 }
650 /**
651  * This method was created in VisualAge.
652  */
653 public void newMethod() {
654     /*
655         Enumeration lv_enum = lv_dtd.getElementDeclarations();
656         while (lv_enum.hasMoreElements()) {
657             ElementDecl lv_ed = (ElementDecl)lv_enum.nextElement();
658             lv_allElements.addElement(lv_ed.getName());
659             FranklinEditor.printDebug(" " + lv_ed.getName());
660             Enumeration lv_enum2 =
661 lv_dtd.getAttributeDeclarations(lv_ed.getName());
662             while (lv_enum2.hasMoreElements()) {
663                 AttDef lv_attribute = (AttDef)lv_enum2.nextElement();
664                 String lv_attributeName = lv_attribute.getName();
665                 FranklinEditor.printDebug(" " + lv_attributeName);
666             }
667         }
668
669         // hashtable of all elements and insertable elements for each
670 element
671         lv_hash = lv_dtd.prepareTable((String)lv_allElements.elementAt(0));
672         lv_enum = lv_allElements.elements();
673         while (lv_enum.hasMoreElements()) {
674             lv_name = (String)lv_enum.nextElement();
675             lv_hash.put(lv_name, new InsertableElement(lv_name));
676         }
677     */
678
679
680
681

```

```

682         /*
683         int lv_type = lv_contentModel.getType();
684         switch (lv_type) {                                // this case statement borrowed from
685         ContentModel.toString()
686             case ElementDecl.EMPTY :
687                 // "EMPTY";
688                 System.out.println("ContentType of " + lv_contentModelNode + " is
689 EMPTY");
690                 break;
691             case ElementDecl.ANY :
692                 // "ANY";
693                 System.out.println("ContentType of " + lv_contentModelNode + " is
694 ANY");
695                 break;
696             case ElementDecl.MODEL_GROUP :
697                 //case ElementDecl.PCDATA:
698                 if ((lv_contentModelNode instanceof CM1op) && ((CM1op)
699 lv_contentModelNode).getNode() instanceof CMLeaf) {
700                     CM1op cs1 = (CM1op) lv_contentModelNode;
701                     //ret = "(" + cs1.getNode() + ")" + (char)cs1.getType();
702                     System.out.println("ContentType 1 of " + lv_elementName + "
703 is (" + cs1.getNode() + ")" + (char) cs1.getType());
704                 }
705                 else if (lv_contentModelNode instanceof CMLeaf) {
706                     //ret = "(" + lv_contentModelNode + ")";
707                     System.out.println("ContentType 2 of " + lv_elementName + "
708 is (" + lv_contentModelNode + ")");
709                 }
710                 else
711
712                     //ret = this.modelGroupNode.toString();
713                     // getType on CM2op returns "|", or ",", "
714                     System.out.println("ContentType 3 of " + lv_elementName + "
715 is " + lv_contentModelNode.toString());
716                     System.out.println("                left " + ((CM2op)
717 lv_contentModelNode).getLeft());
718                     System.out.println("                right " + ((CM2op)
719 lv_contentModelNode).getRight());
720                     break;
721             }
722         */
723
724         /*
725         switch (lv_dtd.getContentType("TITLE")) {
726             case -1:
727                 // element is not declared
728                 System.out.println("getWidget: element " + lv_elementName + "
729 is not declared");
730                 break;
731             case ElementDecl.EMPTY:
732                 // any element is not insertable
733                 System.out.println("getWidget: any element is not insertable
734 to " + lv_elementName);
735                 break;
736             case ElementDecl.ANY:
737                 // Any element is insertable
738

```

```

739         System.out.println("getWidget: any element is insertable to "
740 + lv_elementName);
741         break;
742     case ElementDecl.MODEL_GROUP:
743         // continued
744         System.out.println("getWidget: Model_Group " +
745 lv_elementName);
746         break;
747     }
748     */
749
750 }
751 /**
752  * Insert the method's description here.
753  * Creation date: (10/11/99 1:31:41 PM)
754  */
755 public static void printNode(CMNode lv_node) {
756     //String lv_elementName = lv_element.getName();
757     //ContentModel lv_contentModel = lv_dtd.getContentModel(lv_elementName);
758     //CMNode lv_contentModelNode = lv_contentModel.getContentModelNode(); //
759 if null, not a MODEL_GROUP
760
761     if (lv_node == null) { // not a MODEL_GROUP, ie ANY or EMPTY
762         System.out.println("printNode: not a model_group " + lv_node);
763     }
764     else {
765         //System.out.println("printNode: " + lv_node);
766         //case ElementDecl.PCDATA:
767 // has qualifiers * + or ?
768         if ((lv_node instanceof CM1op) &&
769             ((CM1op)lv_node).getNode() instanceof CMLeaf) {
770             CM1op lv_cs1 = (CM1op)lv_node;
771             //ret = "(" + cs1.getNode() + ")" + (char)cs1.getType();
772             System.out.println("ContentType 1 is (" + lv_cs1.getNode() +
773 ") " +
774                             (char) lv_cs1.getType());
775         }
776         else if (lv_node instanceof CMLeaf)
777         {
778             // no qualifiers *, + or ?
779             //ret = "(" + lv_contentModelNode + ")";
780             System.out.println("ContentType 2 is (" + lv_node +
781 ")");
782         }
783         else {
784             //ret = this.modelGroupNode.toString();
785             // getType on CM2op returns "|", or ",", "
786             //System.out.println("ContentType 3 is " +
787 lv_node.toString());
788             //System.out.println("          left " + ((CM2op)
789 lv_node).getLeft());
790             //System.out.println("          right " + ((CM2op)
791 lv_node).getRight());
792             printNode(((CM2op)lv_node).getLeft());
793             printNode(((CM2op)lv_node).getRight());
794         }
795     }

```



```

796  /*
797  int lv_type = lv_contentModel.getType();
798  switch (lv_type) {                                // this case statement borrowed from
799  ContentModel.toString()
800      case ElementDecl.EMPTY :
801          // "EMPTY";
802          System.out.println("ContentType of " + lv_contentModelNode + " is
803  EMPTY");
804          break;
805      case ElementDecl.ANY :
806          // "ANY";
807          System.out.println("ContentType of " + lv_contentModelNode + " is
808  ANY");
809          break;
810      case ElementDecl.MODEL_GROUP :
811          //case ElementDecl.PCDATA:
812          if ((lv_contentModelNode instanceof CM1op) && ((CM1op)
813  lv_contentModelNode).getNode() instanceof CMLeaf) {
814              CM1op cs1 = (CM1op) lv_contentModelNode;
815              //ret = "(" + cs1.getNode() + ")" + (char)cs1.getType();
816              System.out.println("ContentType 1 of " + lv_elementName + "
817  is (" + cs1.getNode() + ")" + (char) cs1.getType());
818          }
819          else if (lv_contentModelNode instanceof CMLeaf) {
820              //ret = "(" + lv_contentModelNode + ")";
821              System.out.println("ContentType 2 of " + lv_elementName + "
822  is (" + lv_contentModelNode + ")");
823          }
824          else
825
826              //ret = this.modelGroupNode.toString();
827              // getType on CM2op returns "|", or ","
828              System.out.println("ContentType 3 of " + lv_elementName + "
829  is " + lv_contentModelNode.toString());
830              System.out.println("                left " + ((CM2op)
831  lv_contentModelNode).getLeft());
832              System.out.println("                right " + ((CM2op)
833  lv_contentModelNode).getRight());
834              break;
835          }
836  */
837  }
838  /**
839   * when processing the DTD elements, check the list to see if we need to
840   process it
841   * in order to create a UI widget.
842   * Creation date: (10/11/99 1:31:41 PM)
843   */
844  public static boolean skipElement(String lv_elementName) {
845      for (int i = 0; i < FranklinEditor.cv_skipElements.length; i++) {
846          if (lv_elementName.equals(FranklinEditor.cv_skipElements[i]))
847  return true;
848      }
849      return false;
850  }
851  /**

```

```
852     * when processing the DTD elements, check the list to see if we need to
853 process this element
854     * in order to create a UI widget. here, we allow for processing our children
855 if we have them.
856     * Creation date: (10/11/99 1:31:41 PM)
857     */
858 public static boolean skipNonDisplayElement(String lv_elementName) {
859     for (int i = 0; i < FranklinEditor.cv_nonDisplayElements.length; i++) {
860         if (lv_elementName.equals(FranklinEditor.cv_nonDisplayElements[i]))
861 return true;
862     }
863     return false;
864 }
865 }
```